File #
B5670-2-3/2-3

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IMPACT ON CONSUMER REFRIGERATOR PURCHASES OF ENERGY CONSUMPTION INFORMATION AT POINT OF SALE

March 1979

The views presented in this paper are those of the authors and do not necessarily reflect the views or positions of the Department of C.C.A.

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EXECUTIVE SUMMARY

THE STUDY

In a dozen department stores across western Canada, energy consumption information was made available to consumers purchasing refrigerators. The major components of the energy information that varied across stores were:

1. The energy consumption labels - two alternative formats of Canada's new ENERGUIDE labels were used.
2. The degree of sales force emphasis on refrigerator energy consumption - two degrees of emphasis were used, emphasis and no emphasis.

These factors formed the basis of the field experiment. The experiment was run over a six week period, during which retail sales data were collected for each refrigerator model by store. Also during this period trained shoppers visited the stores to monitor in-store energy information activities. After the experiment was completed a survey questionnaire was used to obtain opinions from consumers who had purchased a refrigerator during the experiment. A second questionnaire was used to assess the reactions of retail sales staff.

BACKGROUND ISSUES

Four general areas of concern formed the platform for this research. The first involved uncertainty regarding the potential energy savings that could result from informed refrigerator selection by consumers. It was clear that improvements in refrigerator design would result in energy savings (Dewees, 1977). However, the magnitude of energy saving that might result through consumers' decisions to select more efficient models of refrigerators needed to be assessed.

The second issue centered on consumer reaction to energy information at the point of sale (EIPS). When choosing a refrigerator consumers face a broad range of product characteristics and a large selection of models. Although consumers have indicated some concern for energy conservation issues, whether or not the salience of this attribute was sufficient to

have an impact on the purchase choice remained uncertain.

The third issue centered on the reaction of retail salespeople. Given the dominance of salespeople in major appliance purchases (Olshavsky, 1973), it was clear that their interest in incorporating energy information into sales discussions needed to be determined.

Finally, there remained the issue of the nature and presentation of energy information. The base point for the research was the ENERGUIDE program initiated in 1978 by the Canadian Department of Consumer and Corporate Affairs. ENERGUIDE specifies that, as of October 1978, five inch diameter, circular labels be attached by manufacturers to all refrigerators for sale in Canada. The key charateristics of this labeling program are that the label is simple (containing a single piece of energy consumption information), the units used for energy consumption are kilowatt hours per month, and that the program allows the labels to be placed inside the refrigerator. Arguments could, however, be made for the use of more detailed information, for the use of dollar spending costs, and for having the label on the front of the refrigerator. The extent to which these format concerns influence consumers' information utilization remained uncertain.

RESEARCH OBJECTIVES

This research pursued two general objectives. The first was to understand better the decision process used by consumers when purchasing major durables with particular emphasis on the impact of energy information and the role of the retail sales force. The second objective was to assess thoroughly the initial impact of the ENERGUIDE program with a view to providing guidance for its future development or extension.

These general objectives, together with the background issues discussed earlier, resulted in the following specific questions:

(1) What is the magnitude of energy savings that could potentially result from consumers choosing from the models of refrigerators available those that are more energy efficient?

(2) How important do consumers consider energy information when making refrigerator purchase decisions?

(3) When consumers are segmented based on their degree of dependence

on retail salespeople, what is the relative size of each segment? That is, what proportion follow various decision styles?

(4) Do retail salespeople consider energy information useful for purposes of retail sales presentations?

(5) What will be the apparent impact of the energy information on consumer choice during the initial period of the ENERGUIDE program (the six weeks of the experiment)?

(6) What is the difference in impact between two types of energy information: dollar operating cost versus kilowatt hours consumption?

(7) What future steps can be taken to maximize the impact of programs which provide energy information at point of sale?

STUDY DESIGN

Through the cooperation of a major national department store chain, a set of twelve stores in western Canada was selected for purposes of experimental manipulation of energy information at point of sale (EIPS). An additional six control stores were monitored under a "no energy information" condition. The twelve test stores were divided into four matched groups with each group receiving a different EIPS treatment. The four treatments are indicated below.

	EIPS EMPHASIS	
LABEL TYPE	No emphasis of energy information by sales staff	Emphasis of energy information by sales staff
ENERGUIDE-type label indicating electricity consumption in kilowatt hours per month	3 stores (Group 1)	3 stores (Group 2)
ENERGUIDE-type label indicating electricity consumption in dollars per year	3 stores (Group 3)	3 stores (Group 4)

During the experiment, the energy consumption of every refrigerator sold was recorded by store, and trained shoppers visited each store weekly to monitor the EIPS treatments. After the experiment, every consumer (a total of 720) who had purchased a refrigerator at any of the 18 stores was sent a mail questionnaire. Through the use of reminder telephone calls, a response of 42 percent was achieved. A second mail questionnaire was used to obtain the views of retail salespeople from the 18 stores involved.

SUMMARY FINDINGS

The findings will be summarized below for each of the seven questions posed earlier.

Potential savings via choice of efficient refrigerators. This issue can be viewed in two ways. First, simply by reviewing the energy consumption of the refrigerators available at retail, several potential savings can be observed. For example, a shift from a thirteen cubic foot frost free to the same size manual defrost could result in an energy saving of approximately 59 percent (132 to 54 kilowatt hours per month). A shift from a large to a small frost free could result in approximately 29 percent saving (185 to 132 kilowatt hours per month for 19 vs. 13 cubic foot sizes). Within a given size a shift from one brand to another could result in a saving of 18 percent (177 to 146 kilowatt hours per month within the 16 cubic foot size).

To put these percentage savings into perspective, earlier research has indicated national annual refrigerator sales of 600,000 units* with a weighted average energy consumption of approximately 125 kilowatt hours per month per unit (Hirshhorn, 1978). Thus, even a 10 percent saving in energy consumption could amount to a national saving of approximately 90 million kilowatt hours per year. To the consumers buying new refrigerators, this represents an annual saving in the neighbourhood of two million dollars per year over the life of the new refrigerators.

Although the above indicates the general magnitude of potential savings, a better indication comes from looking at the specific mix of refrigerators being sold and addressing a series of "what if" questions. For

* This figure includes sales to intermediaries such as apartment owners.

example, what if everyone bought the most efficient refrigerator of the same size? Analysis of the mix of refrigerators sold during the six week experiment indicates that an energy savings of approximately 3 percent would result from this type of shift in consumer choices. If every consumer shifted one size smaller and selected the most efficient model of that size the energy savings would be approximately 10 percent. If all consumers who purchased 13 cubic foot frost free refrigerators shifted to the same size manual refrigerator (which are the largest manual defrost readily available), the savings would be approximately 6 percent.

Clearly the savings, both in terms of national energy consumption and consumer electricity bills, can be substantial even from relatively minor shifts in consumer purchase decisions. The remainder of the research dealt with the extent to which these shifts might be achieved as a result of the provision of energy information at the point of sale.

Importance of energy information to consumers. Two types of findings were made regarding this topic. At a general level it was interesting to observe that, relative to national surveys on energy attitudes, substantially fewer consumers considered the energy shortage to be an imminent national problem. A national survey conducted during the same period as this research found that 56 percent of Canadians considered the "energy shortage" to be relatively serious (McDougall, et al., 1979). A similar question in this study indicated only 30 percent considered the energy shortage a serious problem. Whether this difference can be attributed to differences in samples or whether people who have just purchased a refrigerator are less inclined to be concerned about energy remains an interesting point of speculation.

Findings more specifically on refrigerator energy consumption indicated that this characteristic was not particularly salient to the majority of consumers. Averaged across all respondents, the importance of "operating cost of electricity" was ranked 15th of 19 characteristics. In contrast, "type of defrost," an energy-consuming attribute, ranked first. However, of consumers buying refrigerators in the presence of EIPS a small group (10 percent) indicated that energy consumption information was either the most important or one of a few major considerations.

Consumer decision styles. Three major decision styles can be presented. First, Independent was used to describe consumers who made purchase decisions without accepting information or assistance from a salesperson. This could be the result of their perceiving the salesperson to be uninformed or untrustworthy. Second, Aided was used to describe consumers who, after accepting information from a salesperson, made their own refrigerator selection. Third, Dominated was used to describe consumers who essentialy abdicated the decision to the salesperson whom they appeared to see as much more capable of making a wise choice. Diagrams of these three styles are provided below.

INDEPENDENT

Consumer ---------- Purchase Decision

AIDED

Salesperson ----- Consumer -------- Purchase Decision

DOMINATED

Consumer -------- Salesperson ----- Purchase Decision

The implications of these decision styles for the focus of EIPS programs is obvious. However, determining the proportion of consumers in each category is a difficult measurement problem. Clearly, consumers are biased against admitting that salespeople make the final purchase choice. On the other hand, salespeople are likely inclined to attribute more control to themselves than is truly the case. Based on consumers' perceptions of themselves, the findings were that 44 percent were "independent," 27 percent were "aided," and 29 percent were "dominated." This is viewed by the researchers as a conservative view of the role of retail salespeople.

Importance of energy information to salespeople. The view held by

salespeople was that consumers are not interested in energy information and that, therefore, there is little value in including it in sales discussions. However, after they were shown a sales aid that could be used to help a customer compare energy consumption across refrigerators, 66 percent indicated they would use this type of aid in their sales presentations. During the experiment, the trained shoppers who visited stores where salesmen had been specifically asked to use a similar sales aid found that the aid was used 47 percent of the time. This appears to indicate some reticence on the part of salespeople to modify their tried and true sales presentations.

Initial impact of EIPS. This issue needed to be addressed at several levels: impact on awareness, impact on understanding, impact on stated importance, and impact on aggregate purchases.

To begin this summary, the area on which impact would be most difficult to detect - aggregate purchases - had to be considered. Was it possible to detect differences between control stores and stores with EIPS in the pattern of refrigerators purchased? In other words, did stores that provided EIPS seem to sell more efficient refrigerators than stores that did not provide EIPS? The study indicated that it was not possible to detect differences.

There were three factors that mitigated against any observable impact on sales patterns. First, analysis of pre-experiment sales patterns by store indicated that the mix of models sold from month to month was very unstable. For example, in one month a store might sell 15 percent manual defrost refrigerators and in the next month only 2 percent. Second, the purchase of a refrigerator is obviously a complex decision in which consumers consider many product characteristics. Under these circumstances, consumers are not likely to be dominated by the introduction of one new piece of information, particularly when the information relates to a product characteristic which has low apparent salience. Finally, it must be emphasized that the findings were based on the first six weeks that EIPS was available in the test stores involved. Neither consumers nor retail salespeople could be expected to comprehend fully its potential significance.

An examination of the findings of the consumer survey resulted in the following questions: Did consumers notice the energy labels? Only 33 percent did. Did consumers understand the labels? 25 percent did. Did consumers perceive significant differences in energy consumption from one refrigerator to another? 5 percent did. Finally, did consumers make use of the energy information in making their selection? For 1 percent of customers shopping in stores providing EIPS, energy information was reported to be the most important consideration. For another 9 percent it was one of a few major considerations.

Difference in impact "kwh" and "$ cost" information. Just as there was no observable impact of EIPS on aggregate sales patterns, little discernable difference existed with regard to the unit of measurement used to define energy consumption. Since both labels were the same size, shape, and colour, it was not surprising to observe that the type of information had no impact on whether or not consumers noticed the label. Further, there was no difference in consumers' reported understanding of the labels, or in the perceived magnitude of differences in energy consumption across refrigerators. There was, however, a statistically significant difference in the stated importance of the energy information in the purchase choice. Consumers that had seen "$" information considered the energy information to be more important than those that had seen "kwh" information. These findings must be viewed with caution, however, since they were based on a relatively small subsample of consumers.

Maximizing EIPS impact. A model was developed to assess alternative managerial initiatives for maximizing the impact of EIPS. For convenience, the model was referred to as IMPACT. It focused on identifying alternative decision paths that consumers could follow in selecting a refrigerator. The components of the model were selected to highlight the role of EIPS in alternate decision paths. As indicated in Figure 1, the main components of the model were: consumer dependence on the salesperson, importance of operating costs in refrigerator choice, and exposure to and understanding of energy labels.

The model can be interpreted as a series of paths that a consumer

FIGURE 1

IMPACT MODEL

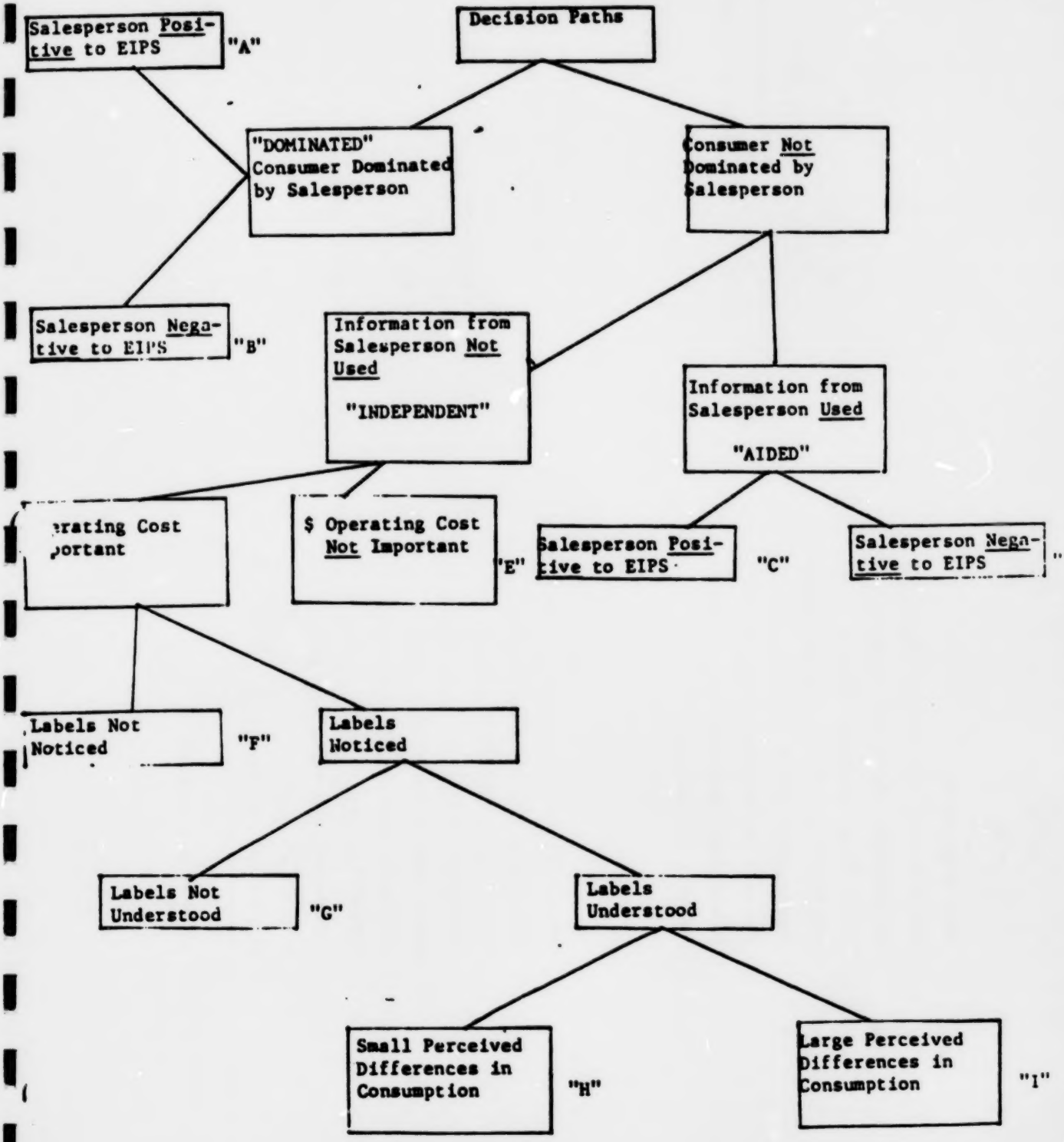

Figure 2

IMPACT Summary

Choice Point	Summary Description	Percent of Customers	EIPS Influence	Initiative Needed to Move Consumers To a Positive Choice Point
A	. Salesperson dominates and is positive to EIPS	19	+	. N/A
B	. Salesperson dominates and is negative to EIPS	10	nil	. Education of retail salespeople
C	. Considers information from salesperson who is positive to EIPS	18	+	. N/A
D	. Considers information from salesperson who is negative to EIPS	9	nil	. Education of retail salespeople
E	. INDEPENDENT and does not consider operating costs important	26	nil	. Change basic consumer attitudes regarding the salience of operating costs
	but does not see EIPS	12	nil	. Change location of labels
G	. INDEPENDENT, operating costs salient but does not understand EIPS	1	nil	. Provide consumers with information as to how energy information should be interpeted and used
H	. INDEPENDENT, operating costs salient but perceives operating cost differences to be insignificant	4	nil	. ditto
I	. INDEPENDENT, operating costs salient and perceives significant operating cost differences	1	+	. N/A

might follow. Each terminus, identified "A" through "I," represents the point at which a refrigerator choice is made (choice point). The important issues that needed consideration were:

(1) What proportion of consumers would arrive at each of the nine choice points?

(2) At which choice points would EIPS have a positive effect (lead to energy efficient refrigerator choices)?

(3) What managerial initiatives would be required to shift consumers from each choice point where EIPS has no effect?

The answers to these questions are presented in Figure 2. In summary, the study findings indicated that 56 percent of consumers who purchase a refrigerator used information provided by salespeople to aid them in their selection. 37 percent would likely receive positive advice regarding EIPS, while 19 percent likely would not. Of consumers that do not use the advice of salespeople (44 percent), the vast majority would be unlikely to use EIPS - 59 percent of these (26 percent of 44 percent) not considering operating costs an important consideration, 27 percent not noticing the EIPS, and 12 percent not completely understanding the significance of the information.

The initiatives that would help to increase the impact of EIPS are also summarized in Figure 2. These will be discussed in the next section.

SUMMARY CONCLUSIONS

Before considering the management implications of the IMPACT model, the major conclusions are presented below:

- There is a clear potential for achieving worthwhile energy savings via shifts in consumer refrigerator choices.
- To date, only a relatively small proportion of consumers has considered energy consumption to be important when selecting a refrigerator.
- A majority of consumers has depended on retail salespeople at least for information and often to recommend which refrigerator to buy.
- Retail salespeople, although not in the habit of discussing energy information with customers, have indicated an interest in using a sales aid that would help compare operating costs of the models on

display.

- EIPS had no observable impact on the mix of refrigerator models sold during the experiment. Given the range of factors influencing model mix this was not viewed as surprising.
- Of consumers purchasing refrigerators at a store providing EIPS, the following was observed:
  - only 33 percent recalled seeing the energy labels.
  - 28 percent said they understood the labels.
  - 5 percent reported noticing major differences in energy consumption from model to model.
  - 1 percent indicated the label information was the most important consideration in the choice. (Another 9 percent said it was one of a few important considerations).
- The analysis that assessed differences between "kwh per month" and "$ per year" labels indicated minimal differences.

The IMPACT model identified four types of initiatives that could be used to increase the influence of EIPS. The initiative with by far the greatest potential would be education of retail salespeople. IMPACT shows that at least 56 percent of refrigerator buyers depend on retail salespeople for information and advice. In the context of sales training done for the experiment, 66 percent of the salespeople indicated interest in using energy comparison sales aids. In other words, through this initiative alone, 37 percent of all consumers could have EIPS presented to them in a favorable manner.

A second initiative that would influence a major group of consumers would be efforts to change consumer attitudes regarding the salience of operating costs. Although this initiative could increase the influence of EIPS for a major group of consumers, it clearly would be a long uphill effort. It is obviously much more difficult to change an opinion about what is important than to provide information to someone who is already convinced.

The third initiative suggested by the model is one that would influence consumers who do not use a salesperson's advice, who consider operating costs important, but who do not notice the labels. The initiative needed is to make the labels more obvious, by means such as having them

attached to the front of the refrigerator rather than hidden away on the inside.

The final initiative need is one that would help consumers more fully understand the labels. This could be accomplished by having a simple information pamphlet available at point of sale. The pamphlet could provide information on energy consumption for alternative models of refrigerators, cost of electricity by region, and example calculations to show how refrigerator operating costs could be compared.

In summary, it is the researchers' view that the current ENERGUIDE label is a good first step towards providing EIPS. Although dollar information would be somewhat easier for consumers to understand, the administrative difficulties associated with providing dollar information do not appear to be counter balanced by potential increases in label impact. This is particularly the case if pamphlets explaining the use of ENERGUIDE labels are made available at point of sale. The necessity of dollar information on labels is also reduced if an effort is made to provide retail salespeople with comparative sales aids. Therefore, the following priorities seem appropriate for increasing the impact of ENERGUIDE labels:

- Place primary emphasis on informing retail salespeople on the interpretation and utilization of ENERGUIDE labels.
- Provide retail salespeople with a sales aid that they can use to show customers (1) how label information can be converted to operating costs, and (2) how models on display compare.
- Provide consumers with an information pamphlet that explains how to compare refrigerators in terms of operating costs. (Pamphlets should be available at point of sale).
- Require placement of ENERGUIDE labels on the outside of refrigerator doors.

PREFACE

For the past year the authors have devoted considerable effort to studying the potential role of energy information at the point of sale. This work was carried out with the support of Consumer and Corporate Affairs, Canada. In particular, the authors would like to acknowledge the encouragement and guidance provided by Dr. John Evans and Mr. Lee McCabe of the Consumer Research and Evaluation Branch of that department.

The major factor in the success of this study was the co-operation which was received from the management of one of Canada's largest department store chains. Enthusiastic support was offered by management and staff at all levels of this organization and their assistance was greatly appreciated. The project also benefited from information supplied by Canada's appliance manufacturers, the Canadian Standards Association, and the Canadian Department of Energy, Mines and Resources.

Finally, the contribution of Ms. Judy Zaichkowsky, who provided competent research assistance at all stages in this research project, is gratefully acknowledged. In addition, the assistance of Greg Russell, Suzanne Frenette, Crystal Nicolson, and Carman Cullen was much appreciated during the execution of the study.

This report discusses a field experiment designed to assess the impact on refrigerator purchases of energy information at the point of sale. Throughout the report the acronym EIPS is used to simplify this expression.

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PART I INTRODUCTION

Energy use and conservation are among Canada's most critical areas of public policy and are likely to remain so in the forseeable future (Evans et. al., 1978). Though much attention is given to policies designed to maintain and increase energy supplies, it is also important to curb energy demand by developing policies to encourage energy conservation. One such policy is designed to achieve conservation in Canada's residential energy use sector. It involves the provision of energy information at the point of sale of major household appliances and is the focus of this research.

1.1 Magnitude of the Energy Conservation Problem

The parameters of Canada's energy conservation have been the subject of much government attention. A recent Energy Strategy Report (Department of Energy, Mines and Resources, 1976) presented a future energy conservation scenario for Canada. This scenario is best captured by comparing the energy demand of the major energy end-use sectors over time. Table 1.1 shows the distribution of net primary energy demand in 1972 and 1990. The 1990 figures are not a forecast of future energy demand but are simply a picture of one possible future pattern based on the estimated impact of likely conservation measures. The strategy appears to be one of reducing the relative contribution of consumer energy consumption. As the figures indicate, the conservation scenario envisages that in-home or residential demand for energy will drop from 19% in 1972 to 13% in 1990. In comparison, the industrial sector demand is viewed as increasing from 25.5% to 29% in the same period. Clearly, if the 1990 scenario is to become a reality, in-home energy conservation must be achieved.

Various estimates of possible residential sector conservation have been made. For example, the Institute for Social Research on Public Policy (Clayton, 1978) estimates that residential energy consumption in Canada

Table 1.1

DISTRIBUTION OF NET[1] PRIMARY ENERGY DEMAND

IN CANADA, 1972 AND 1990

SECTOR	1972	1990
Residential	19%	13%
Transport - road	17.5%	16%
Transport - other	5.5%	6%
Commercial	14%	13%
Industry	25.5%	29%
Energy Supply[2]	14.5%	16%
Non-Energy Use	4%	7%
Total	5.88×10^{15} BTU	8.4×10^{15} BTU

1. Excludes adjustment to convert hydro and nuclear energy to approximate fossil full equivalent.
2. Includes conversion losses.

Source: Energy Conservation in Canada: Programs and Prospects, Monograph, Report EP77-7, Energy Mines and Resources Canada, Ottawa, 1977.

could be decreased by 35% of current consumption levels. A comparable figure (30%) has been estimated for the U.S. (Federal Energy Administration, 1977). Savings of these proportions represent about 7-10% of total national energy demand. In Canada this would mean a possible saving of 280,000 barrels of crude oil per day (Cullen, 1978) or a dollar saving of over $3 million per day.

There are a number of programs in Canada, United States, and Europe designed to achieve residential energy conservation. Many of the programs focus on conservation in the areas of space heating, which accounts for approximately 50-70% of residential energy use, and water heating, which accounts for 15-20%.[1] There are also serious policy attempts to achieve energy conservation for the seven major household appliances: refrigerators, freezers, ranges, automatic dishwashers, clothes washers, clothes dryers and air conditioners. These major appliances account for 8% of Canadian household energy consumption (Cullen, 1978). Butler and Dunbar (1978) place American figures even higher at 9% for food cooling/freezing alone, 7% for air conditioning, and 5% for cooking.

1.2 Focus of the Research

There are several alternative strategies for achieving consumer energy savings. As indicated in the general classification scheme in Table 1.2, conservation can be achieved through a variety of direct (regulatory) or indirect (informational) interventions which encourage: (1) design of more efficient products, (2) consumer purchase of more energy efficient brands/models, or (3) reduced or more efficient usage of energy consuming products. As highlighted in this table, the particular focus of this research is an indirect intervention designed to alter purchase decisions with the provision of energy information at the point of sale (EIPS).

Although the present research does not deal with alterations in pro-

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[1] A range of percentages is given because estimates vary from one source to another and from one country to another. The figures for Canada are estimated to be 70% for space heating and 18% for water heating (Energy, Mines and Resources, 1977).

TABLE 1.2

STRATEGIES FOR CONSUMER ENERGY CONSERVATION:
STRUCTURE AND EXAMPLES

INTERVENTION TYPES	STAGE OF INTERVENTION		
	Product Focus	Consumer Focus	
	Availability/ Design	Purchase Decision	Use Behavior
Regulation (Mandatory)	. minimum standards (miles per gallon) . product bans	. tax on energy inefficient products (big cars)	. energy taxes (gasoline or utilities) . speed limits
Information/ Education (Voluntary)	. advice to manufacturers re: conservation through changes in materials or design	. advertising campaigns on what to buy to conserve energy (insulate home)	. advertising campaigns on how to conserve (turn down thermostats)
		* . point of sale labels on product energy consumption	. consumption feedback to sensitize consumer to energy use
		* . salesperson's advice re: energy conserving models	
		* EIPS	

* indicates focus of the present research, referred to as energy information at point of sale (EIPS).

duct availability/design or consumer use behavior, it is important to note that these are areas of substantial potential energy savings. For example, individual design options can produce energy efficiency improvements of anywhere from 3-33% for refrigerators and freezers, 3- 25% for ranges, 2-50% for clothes washers, 2-20% for clothes dryers, 4-30% for dishwashers and 2-10% for room air conditioners.[2] At an aggregate level it has been estimated that about 4% of U.S. residential energy consumption could be saved by 1980 if major appliances were designed to be more energy efficient (U.S. Senate Hearings, 1973). A recent review of the many sources that have dealt with the potential conservation in Canada's residential sector (Cullen, 1978) provides evidence that substantial energy savings can be achieved through design changes to major appliances. At the same time, it is apparent that discrete use of these appliances (e.g. by reducing operating time, changing temperature settings, etc.) will cut energy consumption considerably.

The focus of concern for this research is an intervention strategy aimed at influencing purchase decisions. Although it may not be generally known, substantial consumer energy saving may be possible through wise purchase behavior. Consumer Reports (1978) indicated, for instance, that some refrigerator-freezers operate effectively on 25 to 30% less electricity than comparable models. Further evidence suggests similar variation in the energy consumption of home air conditioners with the same cooling capacity (Herenteen, 1975). Thus, the issue becomes one of providing consumers with adequate information to make energy efficient choices.

In an attempt to achieve substantial energy savings (through modification of consumers' purchase decision), the Canadian government has developed energy consumption labeling schemes for major household appliances. The first label requirement--for refrigerators--was introduced in October, 1978 under the name of ENERGUIDE. Under this program all refrigerators manufactured after September 30, 1978 are required to have attached to them an ENERGUIDE label which states "this appliance model number ___ uses ___ kwh[3] of electricity per month when tested in accordance with CSA[4] standards." Over the next several years consumption labels for the other major appliances are scheduled to appear.

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[2] These figures are contained in a series of technical background papers on U.S. appliance efficiency targets released by the Federal Energy Administration (now Department of Energy) in 1976.

[3] kwh refers to kilowatt hours.

[4] CSA refers to the Canadian Standards Association.

The specific objectives of the ENERGUIDE program, as outlined by the Hon. Warren Allmand, Minister of Consumer and Corporate Affairs, Canada, in a May 16, 1978 news release are:

(1) to permit consumers to select, among otherwise comparable models, refrigerators that consume the least amount of energy.
(2) to enable the consumer to realize a monetary saving by using energy consumption as a purchase criterion.
(3) to encourage manufacturers to continue to improve the energy consumption of their appliances.

The minister felt that the benefits of the ENERGUIDE program would be significant. This major policy thrust provides the focus for the present research.

Hirshhorn (1978) carried out an in-depth analysis of the costs and benefits of Canada's ENERGUIDE labeling program for major appliances. Using the example of refrigerators, he concluded that an energy labeling program would result in a net benefit to the Canadian society. In most cases his benefit-cost ratios for a ten year (1968-1978) period varied from 20/1 to 30/1, depending on the assumptions used. Although typical ten year net benefits ranged from $80-$150 million, extreme values ranged from a low of $42 million to a high of $295 million. In no case was there a net cost.

1.3 Research Objectives

The present research was designed to assess the potential of EIPS as a method of achieving energy conservation through consumer purchase of more energy-efficient major appliances. Thus, the research efforts focused on two related objectives:

(1) To better understand the decision process used by consumers when purchasing major durables, with particular emphasis on the impact of energy information and the role of the retail sales force.
(2) To do a thorough assessment of the intial impact of the ENERGUIDE program with a view to providing guidance for future developments or extensions of the program.

1.4 Research Overview

The approach used in this research was to test the ENERGUIDE labels for refrigerators in actual retail settings. A field experiment was conducted during a six-week period in the fall of 1978 in the major appliance sections of a large department store chain. Eighteen stores located between Thunder Bay, Ontario, and Victoria, British Columbia were used in the study. The following procedure was employed:

- Six stores formed a control group in which no energy information was provided.
- Twelve stores were allocated to test groups with each group of three stores receiving one of the four treatments shown below:

LABEL INFORMATION	SALESPERSON EMPHASIS ON ENERGY	
	No Sales Push	Sales push
kwh/month	3 stores	3 stores
$/year	3 stores	3 stores

The EIPS treatments studied thus consisted of two types of energy label information and two levels of salesperson emphasis on energy. The labels were identical except that one contained kwh/month energy consumption data and the other, energy consumption expressed in annual dollar operating costs. The two levels of salesperson emphasis (no sales push, sales push) refer to the presence or absence of "training" sessions for refrigerator sales staff. The training consisted of providing salespeople with background on the ENERGUIDE labeling program, consumption data for models they sell and refrigerator energy consumption sales aids for use at the point of sale.

Data was collected on historical refrigerator model sales by store, test period model sales by store, salespeople's utilization of energy in-

formation (trained shoppers were used), consumers' purchase behavior (consumer survey), and salespeople's perceptions of consumer refrigerator purchase behavior and concern for energy (salesperson survey).

The remaining sections of the report provides further details on this research. Part II provides additional background on several important dimensions of the area of energy information and consumer choice. Included in this section is a review of relevant prior research evidence. In particular the literature review highlights the critical role that retail sales people are likely to play in the success of any point of sale energy labeling scheme. Part III describes the research methodology including both the exploratory and experimental stages of the research. This section lists the guiding research questions and the limitations of the research. Part IV discusses the research findings. Finally, Part V contains conclusions and implications.

PART II BACKGROUND

The purpose of this part of the report is to take a closer look at EIPS concepts and activities. This will help delineate the important issues that must be addressed when attempting to influence purchase decision via an EIPS scheme.

First, a classification matrix for consumer energy information is presented. This framework is used to highlight the issues about which policy makers should be concerned. Second, a review of research evidence in EIPS and related areas is presented. This is followed by a review of the recent EIPS activities of the Canadian and United States governments.

2.1 Energy Information for Consumer Purchase Decisions

Information programs are a primary means of encouraging consumers to make energy efficient choices. Table 2.1 classifies alternate means by which consumers receive information. As indicated in this table, consumer energy information can be communicated via various media: mass advertising, point of sale and word of mouth. Further, the communication may be commercially sponsored by manufacturers and retailers or non-commercially sponsored by government or non-profit agencies. There are also many message content variations. The examples in Table 2.1 are chosen to emphasize the energy consumption attributes of products, for it is this type of information which is likely to have a direct effect on purchase decisions, particularly when it is made available and emphasized at the point of sale. A variety of other general energy related messages-about the nature of the energy problem and energy prices, for example-may also be communicated. Denney (1978, pp. 22-24) presents a very good description of these more general energy relevant messages.

Table 2.1 provides a useful framework for considering the potential

TABLE 2.1

CONSUMER ENERGY INFORMATION:
STRUCTURE AND EXAMPLES

MEDIA	MESSAGE TYPE: Non-Commercial	MESSAGE TYPE: Commercial
Mass Media: (TV, Radio, Newspaper, Magazines)	. public agency ads e: energy consumption differences in across brands/models . public agency films re: the need to conserve . Consumer Reports comparing brands/models	. manufacturers' product ads featuring energy saving brand advantages
Point of Sale: (displays, booklets, sales presentation, labels)	. booklets by public agency available for use by retailer . standardized energy labels	. manufacturers' booklets featuring energy saving advantages . retailer's display featuring energy saving models . model naming ("Energy Saver") . sales presentation featuring energy saving
Word-of-Mouth: (friends/ family, consumer information services)	. discussions with experienced friends or family . telephone/visit consumer information service operated by public or non-profit agency	

impact of government sponsored (non-commercial) energy information labels, such as those being developed in Canada, United States and Europe. There appear to be a number of issues about which policy makers should be concerned. One key question is, to what extent these vehicles will influence choice, both by themselves, and in conjunction with supportive point of sale and/or mass media communications. Related concerns are what message content to include on the labels (e.g., units of consumption, cost of consumption) and what format of presentation to use (e.g., figures, chart/indices). The overriding concern is, of course, whether the content is salient to consumers. It is clear that information about product attributes which consumers perceive to be unimportant will have little effect on their choice behavior. There is reason to believe that, to date, consumers make little use of energy related criteria when purchasing major energy consuming durables.

2.2 Potential Impact of EIPS: A Review

Three areas of literature appear to be relevant to an assessment of the potential impact of EIPS disclosures. First, evidence of consumers' degree of concern for energy peformance features of products must be reviewed. If there is low salience attached to energy attributes in purchase decisions, the success of EIPS schemes will be difficult to achieve. A second important area to consider is that dealing with consumer response to product labeling programs in general and energy labeling programs in particular. Finally, since EIPS schemes must operate in actual retail environments and since customers typically encounter salespeople while shopping, it is imperative to assess the importance of salespeople in the purchase decision for energy consuming durables. If salespeople have a decisive influence on consumer choice the success of an EIPS scheme might depend on the extent of emphasis the program and its contents receive in sales presentations to consumers. These three areas of literature are reviewed in turn.

2.2.1 Consumer Concern for Energy Attributes. Consumers are concerned about energy conservation. In Canada and the United States, recent studies show that 64% (Contemporary Research, 1977a) and 84% (Milstein, 1976), respectively, judge energy problems to be "very" or "somewhat" serious. However, this concern has been only weakly reflected in their purchase decisions. That is, little importance has been attached to energy related product attributes in consumer purchases of major energy consuming durables.

In a 1977 study involving consumers who had recently purchased refrigerators or freezers, not a single respondent mentioned energy related choice criteria in response to an open-ended question on reasons for choosing the particular appliance item (Anderson, 1977a). In addition, when asked to rate the importance of a list of product attributes to their purchase on a six point rating scale, respondents attached the lowest importance to operating costs and energy efficiency attributes. This study led to the following three conclusions:

(1) Energy related attributes are not determinant in appliance choice behavior;

(2) Consumers are likely to be unwilling to trade off operating (energy) cost savings for convenient appliance features such as frost free operation;

(3) Energy information labels may initially not have significant effects on appliance choice behavior.

A recent qualitative study on the topic of appliance purchase and energy labels (Contemporary Research, 1977b) appeared to confirm the above conclusions. The study, based on a total of six focus group interviews with present and prospective refrigerator buyers, concluded:

> The indications are clear that at this point in time the energy consumption of a refrigerator is a very minor consideration in the choice of a particular make or model. This is because not only are refrigerators not perceived to be one of the heaviest energy users among appliances but it is felt that there is little difference between different makes with respect to electrical usage. (p. 7)

Further evidence of the lack of salience of energy attributes is contained in a study by Denham et al. (1977). The study was conducted in early 1977 and involved personal interviews with over 1,600 Canadian households.

A part of the information collected related to the purchase of appliances. The study indicated that energy operating costs did not appear among the three most important purchase criteria for any appliance included in the study. These results clearly illustrate the fact that although consumers may be concerned about energy issues, they do not at present consider energy attributes to be salient purchase criteria in their appliance purchase decisions.

As discussed by Denney (1978), the problem may be attributable to the fact that consumers do not feel energy issues rank among the highest priorities for public concern; they appear willing to make some effort but are not prepared to take decisive actions such as exerting the kind of shopping effort required to ensure that the most energy efficient product alternative is chosen.

The implications of this apparent lack of salience of energy information for EIPS schemes may be that it is not enough simply to make energy information available to consumers; the information must be emphasized. That is, efforts must be made to show/convince consumers of the relevance of product energy consumption in decision making--a much more demanding task.

2.2.2 Impact of Product Energy Consumption Labels. Concern for product energy labels is quite recent and few studies have been designed to determine their impact. There is, however, considerable evidence on the impact of other point of sale non-commercial information programs which is of value in assessing the probable impact of energy label disclosures. This more general literature will be discussed briefly before the limited evidence on energy label disclosures is considered.

A recent state of the art review of labeling research concluded, "It is clear that informative labeling programs cost, and that they are not used efficiently or extensively by all consumers, especially without major educational and promotional program support" (Miller, 1978, p. 76). Miller suggests, however, that informative labeling might be the most economical and least restrictive means of educating and protecting consumers.

Day (1976) provides an excellent assessment of the effects of point of sale information disclosure requirements. He presented a tabular summary of the observed effects of five different disclosure requirements (nutrition labeling, unit pricing, truth in lending, information tags/labels and open dating). Day arragned the empirical evidence of effect in a hierarchy of

possible consumer responses; information acquisition, information processing, and information use. He suggested that the most noteworthy aspect of his presentations was the apparent support for the hierarchy conception across all five disclosure schemes. Consistently, indicators of information acquisition ranked higher than indicators of information processing, and where behavioral (use) measures were employed, it ranked lowest of the three.

With nutritional labeling, for example, 26% of the consumers were exposed to the label, 16% understood the label, and only 9% claimed use of the information. A similar pattern emerged for unit pricing - 60 to 70% were aware of the concept, 50% understood its meaning, and 30 to 50% claimed to use it in a buying decision. For informative labels (buying guide tags), 50% noticed the tags, 28% found them helpful, but there was no measurable behavioral effect. The findings presented for truth in lending and open dating disclosure schemes also supported the hierarchy of effects concept.

Similar findings were also reported by Anderson (1977b) for an informative labeling scheme for household carpeting. Labels varying in amounts and types of performance information were presented to consumers in a simulated carpet shopping situation. The labels were found to have some attitudinal effects (consumers felt better) but negligible behavioral impact (consumers chose better or differently).

The above findings are limited to the purchase of credit, food items, small durables or major durables in an unreal purchase setting. In these situations it is apparent that, in general, point of sale label disclosures do not have large impact on consumer <u>choice</u> behavior. Is the situation different for energy labels on major durables in actual retail settings? Unfortunately, this question cannot be answered based on prior research. The limited evidence, reviewed below, suggests some energy label impact but further studies must be conducted.

Findings from an experimental study by Hutton (1978) involving simulated purchasing of major appliances suggest that the impact of life cycle cost (LCC) labels on consumers is strongest for measures reflecting more cognitive as opposed to behavioral aspects of decision making. Hutton concluded that the consumers' knowledge of energy cost data is lacking and that they do not consider energy to be an important dimension of choice. LCC[5] information had virtually no impact on appliance choice behavior

[5]The life cycle cost labels used by Hutton included not only the initial purchase price but the cumulative amount likely to be spent on energy (cost of operation).

in that consumers did not appear willing to give up the energy consuming convenience features.

McNeill and Wilkie (1978) reported on an experimental study designed to measure the impact of refrigerator energy labels on consumer decision making . The study was prompted by impending appliance labeling programs in the U.S. Based on the results from a simulated refrigerator shopping task, where 180 female respondents were exposed to various label contents and formats, the authors concluded that:

> . The total profile of the consumer response to this exposure to energy use data indicates a potential impact of the disclosure which is consistent with the goals of the energy labeling program and the content of the information.
> . Respondents were exposed initially through an acquisition task. In this "initial shopping visit to a well-known local appliance store," results showed significant effects of the label on model preference, overall impressions, and identification of energy inefficient models.
> . The respondents, on a second "shopping trip," made reasonably accurate judgements about the efficiency of the various models' energy performance. Even when models were evaluated high or low overall, subjects in this task characterized energy efficiency correctly.
> . The strongest test was a choice task asking respondents to "build" their own refrigerators by considering and choosing a set of features. The results of this task were generally nonsignificant. It does not appear that strong behavior change is likely to occur following only a single exposure to this new information (p. 33).

Thus, while refrigerator energy labels had little impact on <u>choice</u> behavior they did produce favourable responses on pre-behavioral measures. This implies support for a hierarchy of effects similar to that evidenced in research on non energy label disclosures where information effects appear not to extend much beyond the attitudinal stages of the hierarchy. The findings from this study, and the earlier one by Hutton, must be taken cautiously, however, since an unreal shopping environment was used. The absence of a real world retail setting, which would include salespeople and real as opposed to simulated refrigerator purchase tasks, is a major limitation.

The potential behavioral impact of energy labels is somewhat more encouraging for automobiles, a major energy consuming product. A U.S. survey of new vehicle buyers (Scardino, et al., 1976), designed to evaluate the impact of gas mileage window stickers on new cars at point of sale, indicated that 72% were aware of the program's existence and 53% actually noticed the gas mileage label on the vehicle they bought. However, the authors reported that only a modest share of new car buyers took the opportunity to compare vehicles for fuel economy. Despite the reported low use of comparative shopping on the fuel economy attribute it appeared new car buyers who were aware of the label were choosing differently. The authors suggested that the program was having a positive effect on the purchase of more fuel efficient vehicles.

This study also pointed to factors limiting the success of the program. For example, 64% of label aware buyers did not believe the estimates. It also found that only 56% of new car purchasers in 1976 reported good fuel economy as an "extremely important" variable in their purchase decisions. When asked in an open-ended question to give their reasons for deciding on a particular make/model, only one out of five new car buyers in 1976 mentioned fuel economy. The researchers concluded that the public had not yet adopted energy conservation as a primary factor in consumption decisions, at least in the case of automobiles.

In summary, it appears energy labels might have a marginally greater impact than other performance labels introduced to date. However, it appears reasonable to suggest that energy label disclosures at point of sale might, by themselves, have limited impact on consumer choice of a major durable item; the support of retail salespeople could be an important mediating factor (evidence of the role of salespeople is presented in the next sub-section of this review). It is also reasonable to suggest that the content and method of presentation of the energy label disclosures might significantly affect the ultimate impact on consumer decision making. Several studies on energy labels have addressed content and format issues, and findings of particular relevance to the present research will now be considered.

The content issue of most relevance to the present study is the units used in disclosing energy consumption product information on the label. The major alternatives are kilowatt hours (kwh) and dollar costs. As already indicated, Canada's ENERGUIDE labels specify kwh consumption units only.

Some interesting findings are contained in a report of a qualitative study (six focus groups) carried out in Canada (Contemporary Research Centre, 1977b). The study investigated consumer reactions to prototype energy efficiency labels for refrigerators. The report points out that "participants raised the point that in itself the number of kilowatt hours was meaningless until it was translated into monetary terms" (p. 25). The authors of the report and a few participants, however, feel that kwh information can be used to compare the relative efficiencies of different refrigerator models. Another point of interest in this study is the observation that there was general acceptance among participants for "the idea of a brochure or booklet available at the point of purchase giving more information about the testing and the findings [behind the energy consumption labeling scheme] and perhaps some more general information about appliance energy usage" (p. 26).

On the basis of this qualitative research the idea emerges that while consumers definitely find the less technical dollar cost disclosure of consumption data more meaningful, they may also be able to cope with the more technical kwh data, providing it is supported by other point of sale product energy communications in such media as printed brochures or booklets.

A more comprehensive evaluation of the communications effects of alternative energy consumption label formats was carried out in the United States (Response Analysis Corporation, 1977). The major goal of the study, which was carried out for the Federal Trade Commission (FTC), was to determine consumer response to different methods of expressing energy consumption information on energy labels for major appliances. The study consisted of two phases, exploratory (six focus group sessions) and quantitative (a field experiment involving a total of 480 subjects from four different metropolitan areas). The exploratory phase focused in part on the consumers energy vocabulary and meaning of technical terms like kwh. The experimental phase measured, among other things, consumer response to various energy labels that might apply to refrigerators, air conditioners and dishwashers. Though all labels employed in this study used estimated yearly energy cost (in dollars) as the unit of disclosure, the experimental design did incorporate six label variations: simple (average yearly cost figures) versus complex (tables of yearly costs depending on cost/kwh and yearly hours of use); "before buying compare energy costs" versus "save

money, conserve energy" headings; verbal versus numeric descriptions of comparison cost information (average yearly costs for one model against models in its class).

Based on the focus group sessions the report observes:

- Expressing consumption information as a cost or dollar figure rather than a usage figure (such as kwh) is best.
- A third possibility of disclosing consumption information, that of an energy efficiency ratio, was least promising of all.
- Provision of additional information (beyond a simple yearly dollar cost figure), such as information which relates cost to usage, appears desirable, at least for a segment of the market.
- "Cost saving" is likely to be the main motivation to purchasing an energy efficient model, but the notion of "conserving energy" also appears to carry some weight.

In addition, the qualitative stage of the research suggestd that energy labels for appliances should be kept simple, brief, non-technical, and common in format from one appliance to another.

The above findings for the apparent superiority of dollar cost over kwh as the unit of energy disclosure is particularly relevant to the present research. However, it is too early to concede the clear advantage to dollar cost; McNeill and Wilkie (1978) produced experimental results to show that these units of measurement had no consistent differential effect on a variety of attitudinal and behavioral indicators of consumer response to refrigerator energy labels.

The results of the experimental phase provided "some, but not absolutely clear cut guidance for the FTC" (Response Analysis Corporation, 1977, p. 7). On the issue of simple versus complex labels, the results were mixed. For dishwashers the simple label appeared better but for refrigerators and air conditioners there was no reason, based on statistical results, for favoring the simple over the complex. Regarding numeric versus verbal modes of presenting comparative performance information on energy costs, there was no compelling evidence to favor one format over the other. Results for the heading variations, "before buying compare energy costs" versus "save money, conserve energy," tended to favor the latter appeal for complex labels and the former appeal for simple labels.

On the basis of this research it appears that format variations on energy labels do not dramatically affect their impact; several options can perform equally well. However, content variations may influence consumer response. In other words, the situation might be one where what you say is more important than how you say it. In fact, McNeill and Wilkie (1978), in their study described earlier in this section, found that the presence of comparative performance information on energy costs does assist consumers in identifying the more energy efficient refrigerators.

In summary, empirical evidence seems to suggest that product energy consumption labels themselves may have little impact on actual choice behavior in the short run. Several ideas emerge, however, which suggest the "communications effects" of energy labels can be improved. Consumer use of labels might be enhanced by proper choice of label content, proper use of supportive information/education materials, and a positive energy emphasis by the retail salesforce. The latter issue is explored below.

2.2.3 Impact of Salespeople on Purchase Choice. The impact of public energy disclosures such as energy performance labels and booklets is likely to be mediated by salespeoples' influences on consumer decision making. The reason for this is that salespeople appear to be the dominant source of information for durable product buyers. Not only are they the most frequently consulted of all information sources, but buyers who do rely on salespeople appear to end up being more satisfied with their purchase than those who rely on some other source (Anderson, 1977b). In the specific case of appliance purchases, Olshavsky (1973) presents findings that suggest it is the salesperson who determines the product attributes considered by consumers. This dominant source, therefore, is very likely to outweigh the impact of energy labels or booklets at the point of sale. If salespeople decide to emphasize the energy attributes of their products and use the label or booklet information in their sales presentations it is likely that the consumer purchase decision would incorporate energy related criteria. However, if the salesperson does not emphasize energy attributes, the mere existence of the energy labels/booklets at the point of sale is likely to

have minimal impact on consumer purchase decisions. The research project outlined in this report is designed to shed light on the importance of supportive roles by salespeople and other media in ensuring the success of energy labeling schemes of the type under development in Canada and United States.

2.3 Current EIPS Activities by Governments

There is a strong public thrust, both in Canada and United States, towards improving the energy information environment at point of sale. The major media vehicles to be employed are energy performance labels attached to products at point of sale. However, supportive media such as performance data booklets and mass media information/education programming are also being considered. As discussed in the introduction to this report, this policy thrust is primarily motivated by a desire to achieve conservation in the residential energy use sector, particularly in the area of appliance energy consumption. Another likely motivation, however, is the policy makers' perception that the private sector is lacking in its efforts to disseminate energy information, in general, and to emphasize energy related product attributes, in particular. A preliminary assessment of retailer and manufacturer performance in this area (Anderson and Claxton, 1978) indicated a lack of attention to energy information and attributes, at least in retail appliance stores as of the summer of 1978. A dearth of energy related product information and emphasis appeared across point of purchase displays, product labels and brochures, other point of sale literature, and salespeoples' verbal presentations.

This review of government EIPS activities focuses on a discussion of a few key examples of energy labels. Though the discussion is restricted to appliance energy labels, it is recognized that similar points could be made for other major energy consuming durables, particularly automobiles, where energy labeling programs exist or are being contemplated. Also it is recognized that many other media such as those listed in Table 2.1 could be employed to communicate energy-relevant messages.

2.3.1 Canada's ENERGUIDE Label for Appliances. The Canadian Department of

Consumer and Corporate Affairs has instituted a voluntary[6] program for energy labeling of major household appliances. The program includes procedures for measuring the energy consumption of electrical products and communicating the information to consumers on an ENERGUIDE label attached to the product at point of sale. Working in cooperation with government, industry and consumer groups, the Canadian Standards Association (CSA) has recently published a standard test procedure for measuring the amount of electrical energy household refrigerators use (CSA Standard C300-1978) and is in the process of drafting similar standards for freezers, ranges, clothes washers, clothes dryers and dishwashers (Canadian Standards Association, 1978). As of October 1978 Canada's appliance manufacturers have tested the energy consumption of their refrigerator models and have forwarded the information to CSA where verifying tests are being conducted. The verified energy consumption information (on CSA sponsored ENERGUIDE labels) was attached to refrigerators manufactured after September 30, 1978. The first ENERGUIDE labeled models began to appear at the point of sale in January 1979. A sample label is shown in Figure 2.1. It is anticipated that a supportive information program designed to increase the sensitivity of consumers and retail sales staff to appliance energy consumption will be implemented in early 1979.

As previously indicated, the essential ingredient of the label is information on the energy consumption (expressed in kilowatt hours per month) for that particular appliance model. The objective of the ENERGUIDE labeling program is to inform consumers of the amount of energy an appliance uses before they buy. Labeling advocates feel that disclosures of energy consumption information to consumers at point of sale are a particularly effective means of precipitating more energy efficient choice behavior. Whether, in fact, the disclosure of electrical energy consumption (kwh) on ENERGUIDE labels will have the intended impact on choice behavior is, however, an unresolved issue. The present research project is designed to provide evidence on ENERGUIDE label impact in actual retail settings.

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[6] The Canadian ENERGUIDE program is, strictly speaking, a requirement-supported by an amendment to the Packaging and Labeling Act. However, as Hirshhorn (1978, p. 37) suggests, it makes modest demands on refrigerator producers and is in marked contrast to regulations which require products to be produced to specific design and performance standards.

FIGURE 2.1

CANADA'S ENERGUIDE LABEL FOR APPLIANCES

2.3.2 The U.S. Energy Labeling Scheme for Appliances[7]. In the United States a Voluntary Labeling Program for Household Appliances and Equipment to Effect Energy Conservation was established as a result of a Presidential directive to the Department of Commerce, Council on Environmental Quality, and to the Environmental Protection Agency in April, 1973. This program was established to deal exclusively with major energy consuming household appliances. The general purposes of the program were to:

(1) Encourage manufacturers (including private brand labelers) to voluntarily provide consumers with information concerning the energy efficiency or energy consumption of major durables.

(2) Encourage consumers to utilize the information when evaluating products by presenting, at the point of sale, energy information in a uniform manner which is readily understandable in order to facilitate product comparisons.

Early success was achieved in that 24 manufacturers representing an estimated 95% of room air conditioner sales in U.S. were participating in the program as of 1975 and generally favourable consumer attitudes were exhibited toward such labels. Subsequently, in 1976, this voluntary program was abolished coinciding with the passage of the Energy Policy Conservation Act which required a mandatory labeling program. The Department of Energy (DOE) and the Federal Trade Commission (FTC) now carry the primary responsibility in the labeling area under this act.

The Energy Policy and Conservation Act (EPCA) passed in December, 1975, has a broad range of powers, with major priorities in the areas of product testing, labeling, energy standards, and consumer education. EPCA labeling rules for a given appliance include disclosure of (1) the estimated annual dollar operating costs of the particular model and (2) information regarding the range of estimated annual dollar operating costs for this and similar models. (Tentative label designs for 13 products were announced by FTC in mid-1978). In addition, the DOE has the power to prescribe energy efficiency standards to any type or class of covered products. However, it is stipulated that resulting energy savings from

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[7] Much of this section is based on conversations and unpublished monographs provided by Dr. Bruce Hutton, University of Denver, Denver, Colorado. Dr. Hutton spent 1978 working in the Department of Energy, Washington, D.C.

their implementation must outweight any increases in price or maintenance expense, lessening of product performance, or negative effects on competition. Finally, the energy labels themselves are not expected to serve both motivational and informational roles; the DOE plans to carry out a program to educate consumers in areas of:

- the significance of estimated operating costs
- ways in which comparative shopping can save energy for the nation and money for the individual consumer
- other matters which may encourage conservation of energy

It is interesting to contrast Canada's ENERGUIDE labels with the EPCA labels in the U.S. While both contain energy performance information, they differ in content and units of measurement used; ENERGUIDE labels use kwh/month while EPCA labels use energy cost/year together with comparative performance information (indicating the range of estimated annual operating costs for this and similar appliance models). In addition, the shape and layout of the labels differ. As indicated in the literature review, these differences may or may not affect consumer response. It is important to determine, for example, which content or format of presenting energy performance data (e.g., units vs. $ cost of consumption) will be most easily understood and utilized by consumers.

A third variation in label information content and form of presentation, namely life cycle cost (LCC), is also a possibility but its conceptual and technical feasibility has yet to be evaluated. The limited consumer research done on the possible effects of LCC labels is not encouraging (Hutton, 1978). There is no evidence of an impending government sponsored LCC labeling program at the time of this writing.

It is clear that there is, at present, little research to suggest which of the energy disclosures has the greatest impact on consumer decision making. But it is reasonable to assume that point of sale label impact will depend not only on the message content of the labels but on the extent of supportive information provided by other point of sale and mass media sources. In particular, it is likely that salesperson messages will have a critical role to play in determining whether or not a point of sale energy labeling scheme is effective in altering consumer choice behavior.

PART III RESEARCH PURPOSE AND METHODOLOGY

As indicated in Part I, there were two purposes that formed the focus of this research. The first was to understand better the decision process used by consumers when purchasing major durables with particular emphasis on the impact of energy information and the role of the retail salesforce. The second was to do a thorough assessment of the initial impact of the ENERGUIDE program. The next section of the report discusses the preliminary data collection that was done to help in the development of a more specific set of research questions. This is followed by discussions of the summary research questions, experimental design, data collection, and design limitations.

3.1 Preliminary Data Collection

Prior to research design, two issues had to be addressed. The first was to determine the extent to which there are differences in energy consumption across refrigerators. The second was to assess the nature and extent of in-store energy information.

3.1.1 Energy Consumption Data. The ENERGUIDE program provided for energy consumption testing of all refrigerators in accordance with specified CSA test procedures. Manufacturers were required to conduct their own testing with submission of results to CSA for verification. The results of these tests were made available to the researchers in early October, 1978. Example energy consumption data are provided in Table 3.1.

It is clear from this information that substantial differences in energy consumption exist from model to model. For example, a 13 cubic foot manual defrost store brand refrigerator consumes only 54 kilowatt hours per month, compared to 132 for a similar frost free model. Among frost free models the range is from 132 to 185 kilowatt hours per month. Within a single size of frost free the maximum range is 146 to 177 kilowatt hours per month. In other words, a consumer, by selecting a 16 cubic foot store brand rather than a 16 cubic foot Brand B could save 31 kilowatt hours per month over the life of the refrigerator.

3.1.2 Pre-ENERGUIDE In-Store Energy Information. In order to assess the

TABLE 3.1

ENERGY CONSUMPTION BY REFRIGERATOR MODEL

EXAMPLE DATA

Model	Size (cu. ft.)	Energy Consumption (kwh per month)
Store Brand (M.D.)*	10	53
Brand A (M.D.)	10	54
Brand B (M.D.)	10	54
Store Brand (M.D.)	13	54
Brand A (M.D.)	14	86
Brand B (M.D.)	14	86
Store Brand (F.F.)	13	132
Brand A (F.F.)	13	142
Brand B (F.F.)	13	140
Store Brand (F.F.)	15	145
Brand A (F.F.)	15	147
Brand B (F.F.)	15	155
Store Brand (F.F.)	16	146
Brand B (F.F.)	16	177
Brand A (F.F.)	17	144
Barnd B (F.F.)	17	144
Store Brand (F.F.)	18	161
Brand A (F.F.)	19	185
Brand A (F.F.)	20	162
Brand B (F.F.)	20	162
Brand A (F.F.)	24	163

* M.D. refers to manual defrost; F.F. refers to frost-free defrost.

extent to which energy consumption information was already available at point of sale, a limited survey of appliance retail stores was carried out in Vancouver. Four types of retail appliance outlets were studied regarding EIPS (2 small appliance stores, 2 major furniture/appliance stores, 5 major downtown department stores, 3 small department stores). In all cases a young woman entered the store and informed the salesperson she was interested in purchasing a new refrigerator for a home which was to be remodelled during the summer. She said she was just starting to look for the appliances and had no previous experience in purchasing such items. Energy information available from displays, labels, salespeople and take-home literature was noted. If the salesperson did not mention energy aspects in the sales presentation, he/she was then asked how economical the appliances were to operate and whether there were energy consumption differences among brands or similar models. The results of this survey were as follows:

(1) Displays and Product Labels. No information was found which compared energy consumption across brands and models. Two major department stores had displays about therma-wall thin insulation and one had a display about an 'energy saver' switch.

(2) Energy Information VOLUNTEERED by salespeople. One salesperson used the thin-wall construction as a selling point for increased storage space. In another store, the salesperson said he knew nothing special about the "thin-wall" construction ("They're all like that now"), and he said he thought the energy saver switch was a waste of time. He said he "couldn't imagine running to the fridge and slipping a switch every time it rains." No other salesperson volunteered comments relating to energy consumption.

(3) Salespeoples' reponse to energy questions. ("How economical are these appliances to operate?" and "Are there differences among models or brands as to their electrical consumption?).

Salesperson, Specialty Store 1: "...manual defrost takes less energy..."

Salesperson, Specialty Store 2: "...phone B.C. Hydro for all energy consumption information."

Salesperson, Major Furniture/Appliance Store 1: "...brands vary by 30% in energy use due to insulation and amps...consult Consumer Reports at Public Library."

Salesperson, Major Furniture/Appliance Store 2: "...frost-free refrigerators and self-cleaning ovens cost more to operate but there is no difference among brands on energy use."

Salesperson, Downtown Department Store 1: "...frost-free refrigerators are just as energy efficient as manual ones because you never have to turn off to defrost... manual defrost consumed just as much energy due to starting motor up again after cleaning." This salesman offered a photocopy of a newspaper article giving cost of energy by appliance (which contradicted his sales presentation).

Salesperson, Downtown Department Store 2: "...here are charts from B.C. Hydro which give yearly figures for energy consumption of different appliances."

Salesperson, Downtown Department Store 3: "...phone B.C. Hydro for energy consumption information...frost-free refrigerators would be cheaper to run due to better storage of food, no freezer burn and therefore less waste...there are no differences in energy consumption among brands of similar appliances."

Of the twelve salespeople "interviewed," only one knew that there is up to a 30% variation in the energy consumption among brands of a similar model. Four salespeople instructed the consumer to contact the Hydro Authority for information on energy consumption of appliances. Two salespeople offered incorrect information on energy use of manual versus frost-free refrigerators. The

majority of the sales presentations focused on physical features of the appliances such as butter conditioner, ice maker and cantilever shelves.

(4) Take home literature. Take home literature was readily available from eight of the twelve retail outlets. Pamphlets representing ten different brands were collected and checked for mention of energy consumption aspects. Only one manufacturer's brochure mentioned energy saving features, and even here no indication of the magnitude of the saving was provided. The main thrust of the brochures involved styling and features.

In summary, the facts about energy consumption of appliances indicate that potential exists for saving energy. However, consumers' choices of appliances rely heavily on in-store information, especially on sales presentations. Thus, if energy consumption is to enter into the decision-making process the consumer must have the energy information brought to his/her attention in the store. From the limited survey of Vancouver appliance dealers, it appears energy information is usually unavailable to the consumer, whether through labels, displays, sales presentations or take home literature. In addition, if the consumer happens to inquire about energy consumption of appliances the resulting information from salespeople is frequently inaccurate.

3.2 Summary Research Questions

Although the general research objectives were outlined in Part I, more operational focus for the research was provided by specifying a series of seven summary questions. It was hoped that the data collection and analysis would start to provide answers to these questions.

(1) What is the magnitude of energy savings that could potentially result from consumers choosing from the models of refrigerators available those that are more energy efficient?

(2) How important do consumers consider energy information when making refrigerator purchase decisions?

(3) When consumers are segmented based on their degree of dependence on retail salespeople, what is the size of each group? That is, what is the proportion that follow various "decision styles?"

(4) Do retail salespeople consider energy information useful for purposes of retail sales presentations?

(5) What is the apparent impact of the energy information on consumer choice during the initial period of the ENERGUIDE program (the six weeks of the experiment)?

(6) What is the difference in impact between dollar operating cost and kilowatt hour energy information?

(7) What future steps can be taken to maximize the impact of programs that provide energy information at point of sale?

3.3 Experiment Design

Although earlier research had relied on laboratory experimentation (Response Analysis Corporation, 1977), it was felt that the complexity of real life refrigerator choices could not be simulated adequately in the lab.

EIPS would be used (or not used) by consumers in a complex arena possibly involving more than one family member, probably entailing interaction with a retail salesperson, and undoubtedly requiring consideration of multiple product characteristics. Because the utilization of EIPS would be influenced by this complexity, a field experiment involving real life refrigerator choices was viewed as a critical test of EIPS impact. This study therefore employed a series of EIPS treatments which varied across sets of department stores to assess the influence of energy information. The operationalization of these treatments is discussed next.

3.3.1 Experimental Treatments.

As indicated by the hypotheses there were two EIPS variables of central concern: information label format (kilowatt hours or dollars) and degree of sales force emphasis on energy (no emphasis or emphasis). The four combinations of these, plus a no energy information (control) treatment formed the five experimental conditions. These were operationalized as follows:

(1) Kilowatt hour labels: ENERGUIDE labels indicating energy consumption in kilowatt hours per month for each model on display were fixed to the inside, hinge wall of each refrigerator.

(2) Dollar cost labels: ENERGUIDE labels modified to indicate energy consumption in dollars per year for each model on display were fixed to the inside, hinge wall of each refrigerator. (See Figure 3.1).

(3) No sales push of energy information: Salespeople were asked to avoid mentioning energy consumption during the six weeks of the experiment. If consumers inquired about the energy labels the salesperson was to explain briefly and avoid drawing attention to comparisons across models.

(4) Sales push of energy information: Each store where this condition was in effect displayed two point of sale posters containing a sample ENERGUIDE label and an appeal suggesting that consumers compare operating efficiency across models. In addition, Salespeople were provided with a Fact Sheet (see Appendix) that they could use to help consumers compare models. The Fact Sheet Table contained a list of refrigerator models sold by the store, grouped according to type of defrost and size. The following energy consumption data was given for each model: (1) kwh per month, (2) annual electricity costs for three different rates (2.5¢/kwh, 4¢/kwh, 6¢/kwh). Finally, the table contained three columns headed "estimated 10 year operating cost," "purchase price" and "total cost" for use by salespeople in arriving at "lifetime" costs for the particular models being considered by a customer. In this manner the concept of life cycle cost could be communicated. Salespeople were instructed by the researchers as to the effective use of the Fact Sheet. Salespeople were specifically requested to discuss energy consumption with each customer.

(5) Control stores: No labels or point of sale information were allowed in the stores used for this treatment.

3.3.2 Treatment Units. A total of 18 stores were used as experimental units. The stores were grouped into four treatment groups, plus a group of control stores. The groups were judgementally matched to balance potential differences associated with geographic region and store size. The final group is presented in Table 3.2.

3.3.3 Administration and Implementation. The weekend prior to the beginning of the experiment, researchers visited each of the 12 stores that were used for EIPS treatments. The researchers instructed the sales staff and attached the appropriate labels to every refrigerator on display. The refrigerator department sales managers provided records of refrigerator sales during the course of the experiment and applied labels to any new display models that arrived in the store.

The in-store energy information was also monitored during the experiment by means of trained shoppers. Each store was visited once a week. After each visit the shopper completed a post-shopping trip record regarding the EIPS observed. A copy of the trip record is provided in the appendix.

3.4 Data Collection

The assessment of EIPS impact required data on both the process of deciding which refrigerator to buy and the actual refrigerator choice. The choice data was supplied by the retail stores in the form of a listing of all refrigerators purchased in each store over the duration of the experiment. The process data covered topics such as consumers' awareness, understanding and preferences with respect to energy information labels. The process data was obtained primarily by means of a consumer post purchase questionnaire and, secondarily, by means of a post experiment salesperson questionnnaire.

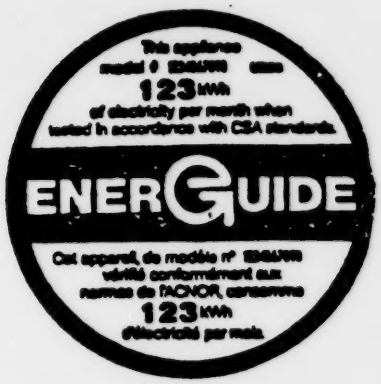
3.4.1 Consumer Questionnaire. The stores involved in the experiment provided a list of names and addresses of all consumers who purchased refrigerators during the experiment. A mail questionnaire was sent to each. An incentive for completing the questionnaire was used, namely

FIGURE 3.1

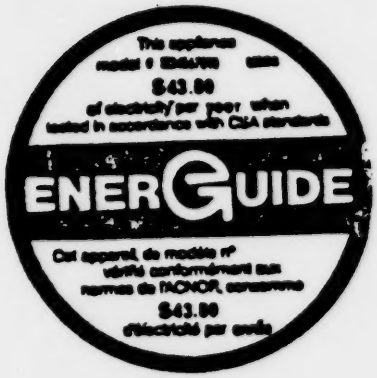
ENERGY INFORMATION LABELS

USED FOR EXPERIMENT

(Actual Size 5 inches in diameter)



"kilowatt hour" label



"Dollar cost" label

chances on two draws for 200 dollar savings bonds. Follow up telephone reminder calls were also utilized.

A copy of the questionnaire is included in the appendix. The 10 topics covered by the questionnaire are listed below:

- description of the refrigerator purchased
- importance ratings for 19 product characteristics
- types of alternatives considered
- experience with the salesperson
- satisfaction with purchase decision
- reason for purchasing at the present
- opinion about electrical energy consumption
- awareness, understanding and preference regarding labels
- operating cost, purchase price trade-offs
- demographic characteristics

3.4.2 Salesperson Questionnaire. As an alternative perspective regarding the nature of the decision process, each salesperson was asked to complete a questionnaire covering the following topics (the questionnaire is included in the appendix):

- salesperson's experience with energy labels
- perceptions of which product characteristics are important to consumers
- perceptions of consumers' interest in energy consumption
- knowledge of energy consumption information
- evaluation of alternative energy consumption labels
- perceived usefulness of energy comparison sales aid
- demographic characteristics

3.5 Design Limitations

There are three observations to be made regarding limitation of this study. First, one of the interests of the study is to assess the impact of the ENERGUIDE Program. It must be stressed that this type of program has two types of impact on consumer choice. There is a direct impact that results when consumers see the information and thereby make more energy efficient decisions. There is also an indirect impact that results from

the pressure on manufacturers to produce more efficient refrigerators. This study assesses only the former.

Second, only initial EIPS effects are being evaluated. Clearly, the effects at a later time would be expected to be greater. However, the decision to do the research at the outset of the program was based on an interest in providing guidance for further program developments.

Finally, the study was restricted to retail outlets west of the great lakes. The degree of EIPS impact might be greater in regions where energy expenses represent a higher proportion of family expenditures. However, it is the researchers' view that although the absolute level of impact might be greater in other parts of Canada, the nature of the decision process (such as reliance on salespeople, and noticing and understanding of labels) would be very similar.

PART IV RESEARCH FINDINGS

The research findings are presented in six sections. The first, Analysis of Potential Energy Savings, considers the potential energy savings that could be achieved by shifting consumers' refrigerator choices to the more efficient models. The second section, Refrigerator Purchases, presents a description of the refrigerators purchased and the relative importance to consumers of various product characteristics. The third section, Decision Styles and Information from Salespeople, analyzes the role that the retail sales force plays for various groups of consumers. The fourth section, Impact of EIPS, assesses the impact of energy information on consumers' awareness and understanding of energy consumption, and on consumers' choice of refrigerators. The fifth section, IMPACT, discusses a model developed to help evaluate the effectiveness of altenative EIPS initiatives. The summary research questions that were suggested earlier are discussed at various points in these findings sections and are summarized in the final section, Summary Findings.

4.1 Analysis of Potential Energy Savings

The energy consumption data for each refrigerator (provided earlier in Table 3.1) give a general perspective regarding the savings that could result if consumers shifted (1) from frost free to manual, (2) from large to small, and (3) to the most efficient model within a particular size. However, assessment of the potential energy savings that could result from shifts in consumer choice needed to consider the current mix of refrigerators being purchased. In other words, it was necessary to determine what proportions were currently manual defrost, smaller sizes, et. cetera.

Table 4.1 indicates the mix of refrigerators purchased at 18 department stores during the six weeks of the experiment. Energy consumption tests had not been conducted on a few models of small counter height style units. Sales of units with consumption data available totalled 667. Of these, 5.4% were manual defrost; 27.6% were frost free in the 13 to 15 cubic foot range, and 56.7% were frost free in the 16 to 19 cubic foot range.

Using the actual mix of refrigerators purchased during the experiment,

TABLE 4.1

MIX OF REFRIGERATORS PURCHASED

DURING EXPERIMENT

Model	Size (cu. ft.)	Energy Consumption (kwh/month)	Number Purchased	Percent of Total (N=720)
Store Brand (M.D.)[1]	10	53	18	2.5
Brand A (M.D.)	10	54	1	0.1
Brand B (M.D.)	10	54	2	0.3
Store Brand (M.D.)	13	54	14	1.3
Brand B (M.D.)	14	86	1	0.1
Store Brand[2]	12	87	62	8.6
Store Brand (F.F.)	13	132	30	4.2
Brand B (F.F.)	13	140	33	4.6
Store Brand (F.F.)	15	145	50	6.9
Brand A (F.F.)	15	147	65	9.0
Brand B (F.F.)	15	147	6	0.8
Store Brand (F.F.)	16	146	159	22.1
Brand B (F.F.)	16	177	86	11.9
Brand B (F.F.)	17	144	84	11.7
Brand A (F.F.)	17	144	2	0.3
Store Brand (F.F.)	18	161	36	5.0
Brand A (F.F.)	19	185	11	1.5
Brand A (F.F.)	20	162	2	0.3
Brand B (F.F.)	20	162	1	0.1
Brand A (F.F.)	24	163	4	0.6
Other[3]	-	-	53	7.2

[1] M.D. refers to manual defrost; F.F. refers to frost free defrost.

[2] This model was a frost free refrigerator with no freezer compartment.

[3] The 'other' models were ones that had not been tested for energy consumption - mostly small, counter height style units.

calculations were made to determine the net energy savings that would result if consumers had shifted their purchase patterns. The shifts in consumer choice and the energy savings outcomes are as follows:

- If every consumer had purchased the most energy efficient refrigerator of the same size and same type of defrost, aggregate survey savings of 3.3% would result.
- If every consumer had purchased a slightly smaller refrigerator and had chosen the most efficient unit of that size (assuming no shifts from frost free to manual), aggregate energy savings of 9.9% would result.
- If consumers who had purchased a 13 cubic foot frost free refrigerator had chosen a manual defrost instead, aggregate energy savings of 5.5% would result.

What do these outcomes imply in terms of national energy savings and savings in consumer electricity spending? The answer to this question can be illustrated by calculating the net savings resulting from a 10% reduction in consumption. Earlier research had indicated that national sales of refrigerators are approximately 600,000 units per year and the average refrigerator energy consumption is 125 kilowatt hours per month (Hirshhorn, 1978). Based on these estimates, the annual electricity consumption of the refrigerators sold in any one year is 900 million kilowatt hours. Thus, if consumers shifted their purchase patterns in such a manner that the refrigerators that went into service each year were 10% more energy efficient, the national energy savings resulting in the fifteenth year (approximate refrigerator life) would be 1.35 billion kilowatt hours per year.

Although discount rates and future electricity rates are contentious, the present value of consumer electricity savings, resulting from a 10% improvement, would be approximately 23 million dollars per year, assuming 3 cents per kilowatt hour, a 15 year refrigerator life, and an 8% discount rate.

It is now possible to answer the first research question:

What is the magnitude of energy savings that could potentially result from consumers choosing the more energy efficient models from those that are available?

If consumers choose refrigerators that result in a 10% net improvement in

energy efficiency, the resulting long run savings would be greater than one billion kilowatt hours per year. Analysis of the mix of refrigerators currently being sold indicate that shifts in consumers' choices could achieve a major portion of this potential.

4.2 Refrigerator Purchases

The general purpose of this section is to provide an overview of the findings obtained from the consumer questionnaire. The questionnaire was mailed to the 720 consumers who had purchased a refrigerator during the experiment. A total of 303 were completed and returned (42%). Frequency distributions for each question are provided in the appendix. The appendix also contains tables that highlight the comparison of survey respondents with all test period refrigerator buyers and with the more general population. The issue of sample representativeness will now be considered briefly.

Overall, there are few differences between survey respondents and the overall test period population of refrigerator buyers. As table 4.1 in the appendix indicates, all stores are represented by respondents and the representation is reasonably proportional to the refrigerator sales activity in the particular store for 16 of the 18 stores. The exceptions are the Seven Oaks store, which accounted for 2.4% of test period sales but only 0.7% of respondents, and one of the Edmonton stores for which the equivalent figures are 12.6% and 3.3%. The under-representation of the Edmonton store is attributable to delays in receiving lists of customers' names and delays of up to two weeks in the Edmonton post office. Since this was a $ no push store it caused the only major deficiency in the representativeness of treatment categories. The average size of refrigerators purchased and their average energy consumption (kwh) were virtually identical for respondents and the test period population of refrigerator buyers.

In comparing the demographic characteristics of respondents to the general population in Western Canada and Canada, a few differences can be noted (See appendix, table 4.2). Respondents are more likely be be married (84% versus 46%), older (only 4.5% under 25 years versus 45% generally), university educated (38% versus 12% generally), employed (71% participation

rate versus 62% generally), and are more likely to earn higher incomes (average $22,000 versus $15,000). A fairer comparison, however, would be between consumer survey respondents and the general refrigerator buying population. It is likely that the latter population would exhibit "upscale" characteristics similar to those of the respondents.

4.2.1 Consumers' Refrigerator Decisions. The average size of refrigerator purchased by the consumers sampled was 15 cubic feet. Ninety-one percent of these had frost free defrost systems. When asked to rate the importance of a series of 19 product characteristics, consumers indicated that 'type of defrost,' 'warranty,' 'total storage capacity,' 'colour,' and 'arrangement of shelves and compartments' were the top five requirements. As indicated in Table 4.2, 'low price' was ranked 10 of 19, and 'operating cost (electricity used)' was ranked 15 of 19.

In terms of the types of alternatives considered, 47% considered only one or two brands, 54% considered only one size, and 79% considered only frost free. In terms of the motivations for the purchase, 93% of the purchases were for use in the family kitchen. The purchase was initiated by three major factors: 27% indicated the old refrigerator was broken, 29% had moved to a new residence, and 36% wanted a newer refrigerator with new features.

Other information about these refrigerator buyers included that on average, consumers expected the new refrigerator would last 14.7 years, that for 78% of the sample it was the first time they had purchased a refrigerator, and that 73% had the use of a home freezer.

4.2.2 Consumer Energy Views. At a general level relatively few consumers (29.5%) believed there would be a serious energy shortage in Canada in the next five years. Further, even fewer were aware of their residential electricity rate (Only 16% were prepared to give an estimate).

When asked specifically about refrigerator energy consumption, only 26% thought that there would be major differences in consumption from model to model. The mean estimate of difference in electricity costs among the refrigerators available today was 25 dollars per year. Although consumers did not expect the energy consumption would differ substantially

TABLE 4.2

IMPORTANCE OF PRODUCT CHARACTERISTICS

WHEN CHOOSING REFRIGERATORS

Product Characteristic	Mean Importance Rating[1]	Rank
Arrangement of shelves, compartment	3.9	5
Brand name	3.3	14
Butter conditioner	2.6	18
Cantilever shelves	3.0	16
Colour	3.9	4
Dual temperature controls	3.7	8
Easy-roll casters	3.6	9
Ice maker	1.9	19
Interior wall construction (porcelain or metal)	3.3	12
Low price	3.4	10
Meat keeper	3.3	13
Number and arrangement of shelves	3.8	6
Operating cost (electricity used)	3.2	15
Outside dimensions	3.8	7
Thin-wall construction	2.9	17
Total storage capacity	4.1	3
Type of defrost (frost free or manual)	4.5	1
Type of insulation	3.4	11
Warranty	4.4	2

1 Rating 1 to 5 for 'Not at all important" to 'Extremely important'.

across models, (1) 81% thought consumers would make serious efforts to purchase energy efficient refrigerators, and (2) 92% thought the government should make energy consumption labels a requirement on all major appliances sold in Canada. Further, 10% of consumers indicated that the energy labels were 'the most important consideration' or 'one of a few major considerations' influencing their refrigerator selection.

4.2.3 Purchase Price vs. Operating Cost Trade Offs. Consumers were asked to trade-off purchase price versus operating costs using two different measurement procedures. Since the results of the two procedures are not completely consistent, the issue remains unresolved.

The first measurement procedure was the following direct question:

If you found two refrigerators that were the same except for their purchase price and the fact that:

. refrigerator A cost $75/year to operate for each year of its life

. refrigerator B cost $50/year to operate for each year of its life

How much higher a price would you be willing to pay for B?

The mean response to this question was 95 dollars, indicating a payback period of 3.8 years. Assuming a 15 year product life (the expected life indicated by respondents), this suggests an implicit discount rate of 25%.

The second measurement method required respondents to select one refrigerator from each of three pairs of refrigerators as indicated below:

	REFRIGERATOR A	REFRIGERATOR B
PAIR ONE:		
- would you prefer A or B?	Frost-free-operating cost: $55 a year purchase price: $600 A	Frost-free-operating cost: $40 a year purchase price: $800 B
PAIR TWO:		
- would you prefer A or B?	Frost-free-operating cost: $70 a year purchase price: $600 A	Frost-free-operating cost: $40 a year purchase price: $800 B
PAIR THREE:		
- would you prefer A or B?	Frost-free-operating cost: $70 a year purchase price: $600 A	Frost-free-operating cost: $55 a year purchase price: $800 B

Analysis of responses to these paired choice questions indicated that 24% had an implied payback of 7 years or less, 50% had an implied payback of 7 to 13 years, 23% had an implied payback of 13 years or more, and 3% were not consistent across the paired choices.

Since arguments could be made that favored each measurement procedure, it remains for future research to continue the assessment of consumers' implied payback period.

4.2.4 Summary. A major issue considered in this section relates to the second research question:

> How important do consumers consider energy information when making refrigerator purchase decisions?

When asked the importance of various product characteristics consumers indicated that energy information was relatively unimportant (ranking 15 of 19). However, a small group (10%) indicated that the experimental EIPS was either the most important or one of a few major considerations in their choice of refrigerators.

4.3 Decision Styles and Information from Salespeople

Consumers were asked a series of questions regarding their experiences with refrigerator salespeople. The first purpose of this section is to categorize consumers based on the extent to which they appear to rely on salespeople. The second purpose is to present salespeoples' perceptions of the significance of energy information in refrigerator purchases. Because a major segment of consumers rely on the views of salespeople, the latter's views on EIPS can have a major impact on consumer utilization of this information.

4.3.1 Consumers' Use of Salespeople. Earlier research has indicated the important role that salespeople play in major durable purchase decisions (Olshavsky, 1973). Rather than continue to establish the average importance of salespeople, the approach used in this study was to attempt to segment consumers into groups in which individual consumers appeared to have similar decision styles regarding reliance on salespeople. From the consumer questionnaire data it was evident that consumers hold rather divergent views as to the usefulness of salespeople.

- While 53% agreed that salespeople made useful suggestions, 17% disagreed (30% neutral).
- While 58% felt salespeople provided useful explanations regarding the differences among refrigerators, 20% disagreed.
- While 42% felt salespeople provided useful printed information to take home, 40% disagreed.
- While 29% felt a salesperson's advice was very important to their choice of refrigerators, 38% disagreed.

Based on the particular views they expressed, consumers were segmented into three groups: Independent, Aided, and Dominated. Consumers categorized as Independent appeared to see little usefulness in the information or advice of salespeople. These views may have been due to feelings that the salesperson was uninformed and incompetent or to feelings that the salesperson's information was overly biased by self interest.

Consumers categorized as Aided appeared to assume responsibility for making a satisfactory purchase decision but were willing to accept information from salespeople. It is conceivable that when differentiating between factual and evaluative information, these consumers adopted the stance, "Give me the facts, I'll decide what's good or bad!"

Consumers categorized as Dominated appeared to rely on salespeople not only for information, but also for a recommendation regarding which refrigerator to purchase. If a consumer had never purchased a refrigerator before and had the view that all refrigerators provide reasonable service, it would not be surprising to find that the 'rational' approach was to rely on a salesperson or a retail outlet with a good reputation.

Analysis of consumers' responses regarding their experience with salespeople resulted in the following groupings:

- Independent - 44% of consumers
- Aided - 27% of consumers
- Dominated - 29% of consumers

4.3.2 Salespeople's Views of EIPS. Salespeople's views of EIPS are summarized by topic areas. First, perceived importance of energy information to their customers. The salespeople questioned ranked the importance of re-

frigerator operating cost as 17th of 18 product features. They reported that 5 to 10% of customers ask about operating cost, primarily when comparing manual versus frost free defrost systems. Further, they felt that customers were usually very adamant about their preference for frost free. As a result, attempts by a salesperson to shift to manual defrost would be fruitless 95% of the time.

Second, knowledge of refrigerator operating costs. There was substantial variation in the perceived difference in cost of operating manual versus frost ffee. Although the mean estimate was reasonably accurate at 21 dollars per year, the estimates wre uniformly distributed from 5 to 40 dollars. Similarly, the estimates for differences among frost free models ranged from 0 to 50 dollars a year, with the mean being reasonably accurate at 15 dollars a year.

Third, experience with EIPS during the experiment. The salesmen estimated that 19% of consumers looked at the ENERGUIDE labels and that approximately 8% asked for an explanation. When asked to explain the labels salespeople indicated that they had little difficulty.

Finally, salespeople's views regarding future EIPS. Approximately half the salespeople felt consumers would make a serious effort to compare operating costs if EIPS were available. However, 78% favored a label program for all refrigerators sold in Canada; 86% would display information booklets that would explain refrigerator energy consumption to consumers. The salespeople were shown a sales aid that they could use to help a customer compare operating costs across models. After reviewing the sale aid, 66% indicated they would use it in their sales presentations.

4.3.3 Summary. This section has been concerned with two topics covered by the summary research questions. One topic was the third question:

> When consumers are segmented on the basis of their degree of dependence on retail salespeople, what is the size of each group? That is, what is the proportion that follows various decision styles?

The analysis in this regard indicated that 44% of consumers made their decisions without the use of a salesperson, (independent group); 27% received information from a salesperson but made their own final choice,

(aided group); and 29% relied heavily on a salesperson for both information and recommendation, (dominated group).

The other topic covered in this section related to the fourth research question:

Do retail salespeople consider energy information useful for purposes of retail sales presentations?

The view held by salespeople is that consumers show little interest in energy information and, therefore, there is little value in including it in sales presentations. However, after viewing a sales aid that could be used to explain differences to customers in energy consumption across refrigerators, 66% stated they would use this type of aid in their sales presentations.

4.4 Impact of EIPS

This section presents findings regarding the apparent impact of EIPS on (1) store sales patterns, (2) consumer awareness, (3) consumer understanding, and (4) stated importance of energy information. The relative impact of kwh labels compared to $ operating cost labels is also discussed.

4.4.1 Store Sales Patterns. The presence of EIPS in stores could result in three types of shifts in consumer choice: (1) from frost free to manual defrost, (2) from larger to smaller sizes of refrigerators, and (3) from inefficient to efficient energy use within a size group. Analysis for each of the shifts is presented in Table 4.3.

The most direct way of viewing the figures in Table 4.3 is to compare the control store figures with those for all stores. If the control stores indicated greater energy inefficiency than the aggregate, it would imply that the EIPS stores had sold a greater proportion of energy efficient units. This was not the case for any of the three shifts evaluated. In other words, there was no statistical information between control stores and EIPS stores in terms of the percentage of manual defrost units sold, mean cubic foot size of units sold, or the proportion of "stars" (See footnote 2 to Table 4.3).

Three considerations provide potential explanations for this apparent

TABLE 4.3

IMPACT OF EIPS ON STORE SALES PATTERNS

TYPE OF IMPACT	STORE GROUP MEANS					
	Control Stores	kwh No push	kwh Sales push	$ Cost No push	$ Cost Sales push	All Stores
1. Shift from frost free to manual (percent manual sold)	17.8	7.9	17.8	20.3	14.5	15.6
2. Shift from large to small (mean cu. ft. of refrig. sold)[1]	15.2	15.9	15.5	15.6	16.0	15.8
3. Shift to most efficient of size (percent "stars")[2]	47.9	56.3	45.8	37.7	42.3	47.2

1 The assessment of shifts in size was restricted to the frost free refrigerators since the manual models were all small (10 and 13 cu. ft.) and were considered in shift #1.

2 "Stars" were defined by two criteria: the most efficient refrigerator within a size category, and no refrigerator consuming more than 146 kwh/mo. This analysis was also restricted to frost free models.

lack of EIPS impact. First, analysis of pre-experiment sales patterns by store indicate that the mix of models sold from month to month was very unstable. For example, in one month a store might sell 15% manual defrost refrigerators and, in the next month, only 2%. Second, the purchase of a refrigerator is obviously a complex decision where consumers might consider many product characteristics. Under these circumstances, consumers are not likely to be dominated by the introduction of one new piece of information - particularly when the information relates to a product characteristic which presently has low salience. Finally, it must be emphasized that the findings were based on the first six weeks that EIPS was available. Neither consumers nor retail salespeople could have been expected to comprehend fully its potential significance.

4.4.2 Consumer Awareness. As indicated in Table 4.4, 33% of consumers who had purchased refrigerators in stores with EIPS had noticed the energy labels. Not surprisingly, the proportions that saw the labels were high in the stores that had sales force emphasis on EIPS.

4.4.3 Consumer Understanding. The proportion of consumers who felt the labels were understandable is also indicated in Table 4.4. Of the consumers who noticed the labels, 84% found them understandable. This represents 25% of all consumers who purchased at EIPS stores.

4.4.4 Stated Importance of Energy Information. The final topic area presented in Table 4.4 is the stated importance of energy information in refrigerator choice. Of consumers noticing the energy labels, 31% indicated that this information was the most important or one of a few major considerations. This represents 10% of all consumers who purchased at EIPS stores.

4.4.5 Kwh vs. $ Cost Labels. Since there were no significant differences in sales patterns between control stores and EIPS stores, analysis of differences within EIPS stores was viewed as inappropriate. Analysis of awareness and understanding of labels indicated no significant differences

TABLE 4.4

IMPACT OF EIPS ON AWARENESS,
UNDERSTANDING, AND INFORMATION USAGE

	STORE GROUP				
	Kwh No Sales Push	Kwh Sales Push	$ Cost No Sales Push	$ Cost Sales Push	All EIPS Stores
. Awareness (percent noticing labels)	30.7	37.5	21.1	40.0	33.0[1]
. Understanding (percent considering labels understandable)	90.0	73.7	75.0	90.5	83.8[2]
. Stated Importance of Energy Information (percent using label info. in choice)	19.1	26.4	45.5	40.9	21.1[2]

1 Percentages based on consumers purchasing refrigerators at EIPS stores (n=224).

2 Percentages based on consumers who had noticed labels (n=74).

between kwh and $cost label stores. There was, however, a statistically significant difference in the stated importance of the energy information in the purchase choice. Consumers that had seen the $cost information considered the energy information to be more important than those that had seen the kwh information. These findings must be viewed with caution since they are based on a relatively small subsample.

4.4.6 Summary. This section has centered on the fifth and sixth research questions:

- What is the apparent impact of energy information on consumer choice during the initial period of the ENERGUIDE program?
- What is the difference in impact between dollar operating cost and kilowatt hour energy information?

The EIPS treatments had no observable impact on the aggregate pattern of refrigerators sold during the experiment. Given the range of factors influencing the model mix, this cannot be viewed as surprising. Of consumers purchasing refrigerators at EIPS stores, 33% recalled seeing the energy labels, 28% felt they understood the labels, and 10% said the label information was a major consideration in the refrigerator choice.

4.5 IMPACT Model

The findings discussed in the previous section indicate the aggregate impact of EIPS on consumers' refrigerator choice. While aggregate effects are important, it is perhaps more important to look at the effects on subgroups of consumers. This can be accomplished by recognizing that consumers have various decision styles and that the process by which EIPS has an impact will vary from style to style.

The three decision styles discussed earlier (Independent, Aided, and Dominated) were used as the base point for developing a model of alternative consumer decision paths. If a consumer's decision was "aided" or "dominated," the critical factor influencing the impact of EIPS would be the salesperson's presentation of energy information. If a consumer's decision was "independent" then several factors would influence EIPS impact: salience of energy consumption, exposure to EIPS and understanding/

perception of EIPS. Figure 4.1 outlines these alternative decision paths and indicates the conditional proportion of consumers that followed each path.

The terminus of each decision path represents the point at which a refrigerator decision is made (choice point), and are identified A through I. For three of the choice points (A, C, I), EIPS could have a positive effect on refrigerator choice, that is, could result in an energy efficient choice. Based on the findings of the current study, 38% of refrigerator buyers might be expected to reach these three choice points. However, two factors should be noted. First, all but 1% of these consumers would be receiving the energy information from a salesperson. Second, the IMPACT model indicates that 66% of salesmen would provide positive EIPS. This is based on salespeople's stated interest in using a comparative sales aid and undoubtedly overstates current emphasis on energy information.

The other choice points indicate the proportion of refrigerator buyers that would not consider EIPS for various reasons. The proportions and reasons are:

- 19%, due to no emphasis by salesperson
- 26%, due to low salience of operating costs
- 12%, due to not seeing the labels
- 5%, due to not understanding labels or perceiving operating cost differences to be small.

In summary, this section has started to address the final research question:

What future steps can be taken to maximize the impact of programs that provide energy information at the point of sale?

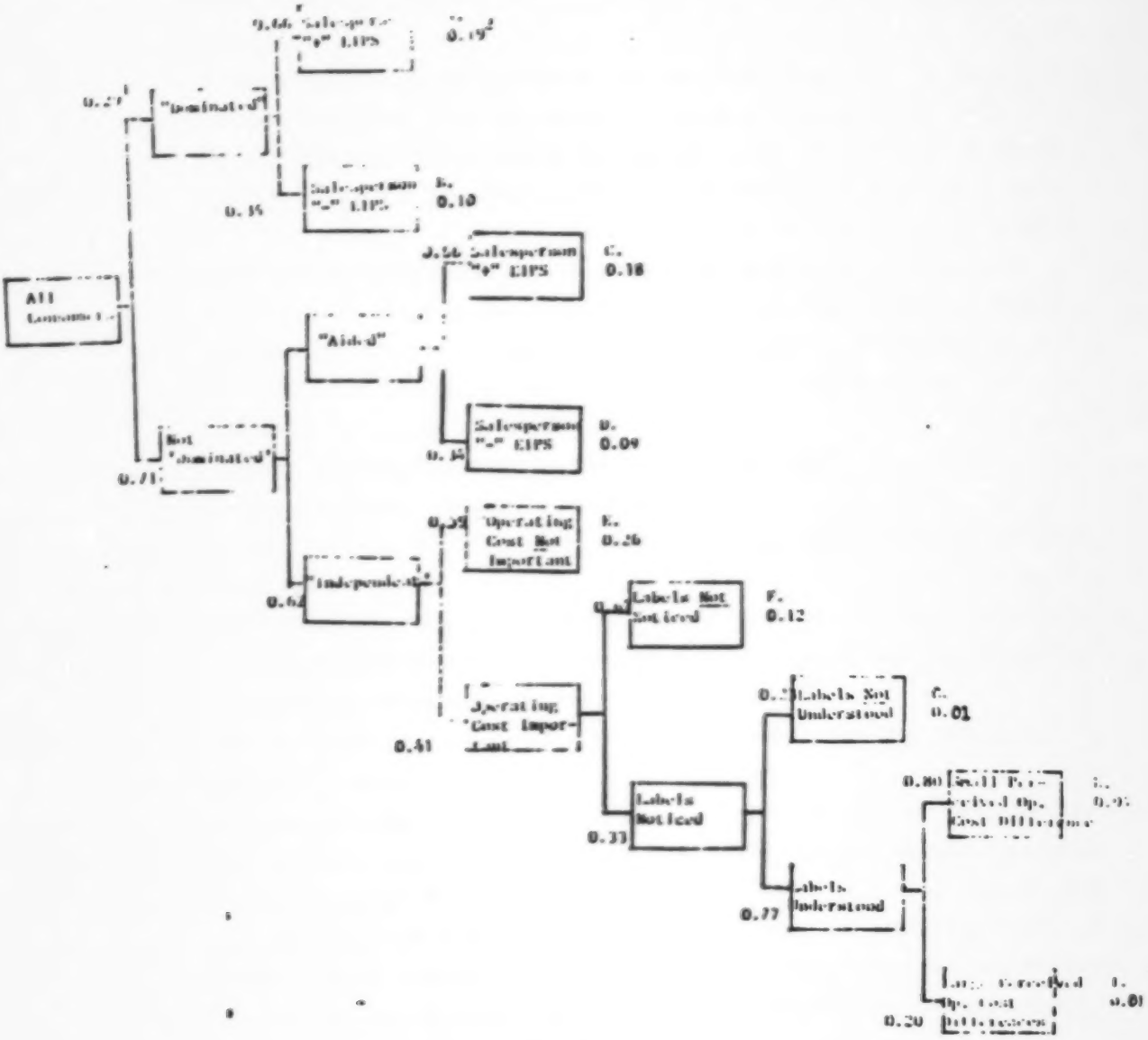
Clearly the IMPACT model has to be interpreted carefully. Other decision paths could be suggested, and some of the proportions are based on relatively small consumer subsamples. However, analysis of several other model formulations indicates that the model presented here provides a reasonable approximation of the proportions of consumers that interface with EIPS in various ways.

The implications of this analysis for maximizing the future impact of EIPS programs are discussed in the concluding section of this report.

FIGURE 4.1

CONSUMER DECISION PATHS

(IMPACT Model)



[1] The branch proportions are conditional proportions, that is, are based on the subsample that reached the particular branching point.

4.6 Summary Findings

- A clear potential exists for achieving worthwhile energy savings via shifts in consumer refrigerator choices
- To date, only a relatively small proportion of consumers has considered energy consumption to be important when selecting a refrigerator
- A majority of consumers depends on retail salespeople at least for information, and often to recommend which refrigerator to buy
- Retail salespeople, although not in the habit of discussing energy information with customers, indicated an interest in using a sales aid that would help compare operating costs of the models on display
- EIPS had no observable impact on the aggregate mix of refrigerator models sold during the experiment. Given the range of factors influencing the model mix, this was not viewed as surprising.
- Of consumers purchasing refrigerators at a store providing EIPS, the following could be observed:
  - .. only 33% recalled seeing the energy labels
  - .. 28% said they understood the labels
  - .. 6% reported noticing major differences in energy consumption from model to model
  - .. 1% indicated that the label information was the most important consideration in the choice (Another 9% said it was one of a few important considerations)
- The analysis that assessed differences between kwh per month and $ per year labels indicated minimal differences
- The IMPACT model segmented consumers based on the primary factor influencing their utilization of EIPS. The largest segment depended on salespeople to provide energy information. A second segment did not utilize EIPS due to low perceived salience of operating cost. A third segment did not use EIPS primarily because they did not notice the energy labels and, finally, a small segment did not completely understand the energy information provided.

PART V CONCLUSIONS

The findings section points to two major conclusions. First, a clear potential exists for achieving important energy savings through shifts in refrigerator purchases to more energy efficient models. Second, consumers utilize different decision styles when making refrigerator purchases. A major distinction among these styles is the extent to which they rely on retail salespeople for information and advice.

The IMPACT model was used to differentiate consumers based on their decision styles and their apparent experience with EIPS. The purpose of this model was to highlight the initiatives that could be used to increase the impact of energy information. The following four initiatives can be suggested:

(1) Educate retail salespeople regarding the useful role EIPS can play in sales presentations.

(2) Change consumers' attitudes to increase the perceived salience of operating costs in refrigerator purchase decisions.

(3) Increase consumer awareness of energy information by such means as moving consumption labels from the inside to the refrigerator door.

(4) Increase consumer understanding of consumption information by means such as point of sale information booklets.

The remainder of this report will (1) discuss each of these initiatives, (2) discuss future research needs for the ongoing management of the ENERGUIDE program, and (3) suggest EIPS action priorities.

5.1 Initiatives to Increase EIPS Effectiveness

Each of the initiatives listed above is directed at different consumer segments. Thus, for each initiative, the concerns are to indicate the proportion of consumers potentially influenced and to suggest directions for implementation.

5.1.1 Education of Retail Salespeople. As indicated in the IMPACT model, Figure 4.1, a total of 45% of refrigerator buyers was categorized as "dominated" or "aided." These consumers all relied on a salesperson for

information/advice and, hence, for EIPS. The experience in this study was that, after receiving information explaining refrigerator energy consumption, approximately 66% of the salespeople indicated interest in using energy information in their discussions with customers. Thus, by educating salespeople to the useful role EIPS can play in a sales presentation, a large segment of consumers could have energy information presented to them in a positive manner.

There appears to be two types of information needed to help salespeople see the role energy information can play. The first is general information regarding the factors influencing refrigerator energy consumption and the methods used for energy consumption testing. This information helps the salesperson believe the validity of the consumption data, and can help him/her explain these issues to consumers. The second type of information that is needed is an explanation of how the label information can be used to compare models. In other words, examples are needed that show how to convert kilowatt hour information to dollar operating costs, how to compare annual operating cost information with initial purchase price, and possibly an example showing that it is possible for a refrigerator with a higher initial price to result in long run savings.

The implementation of this salesperson education would appear to be best served through communication with retail refrigerator department managers and sales managers. This communication would include (1) an explanation of the purpose of the salesperson education activity, (2) an informational booklet for each salesperson, and (3) a supply of fact sheets that salespeople could hand out to customers when comparing refrigerator energy consumptions. An example of the fact sheet used as a sales aid during this study is included in the appendix. This fact sheet includes (1) models available, (2) kwh energy consumption by model, (3) dollar operating cost by model for various electricity cost rates, and (4) space for computing a combined long run operating cost plus purchase price.

A secondary method of providing EIPS through salespeople would be by encouraging retailers to emphasize energy efficient models in refrigerator advertisements and promotions. Clearly, a major proportion of refrigerators sold by retailers are the models featured in sales promotions. If these promotional efforts centered on energy efficient models many

consumers would be influenced in this regard.

5.1.2 Increasing Salience of Operating Costs. The IMPACT model indicates that 26% of refrigerator buyers make their refrigerator choice without the assistance of a salesperson and do not consider operating costs to be important. These consumers would be expected to ignore EIPS as they shop for their refrigerators and, thus, would be difficult to influence through further energy messages. (It is clearly much more difficult to change perceptions of what attributes are important than to provide information about an attribute that is seen as important).

This segment of consumers is seen as the most difficult to reach with EIPS and, therefore, is considered of lowest priority. Changing attitudes toward operating cost salience would undoubtedly require a long term educational effort, possibly of a mass media variety.

5.1.3 Increasing Consumer Awareness. The IMPACT model indicated that 12% of consumers were categorized as making their choices without the assistance of a salesperson, considering operating cost important, but not noticing the energy information labels. Steps that would increase consumer exposure to the labels would reduce this no impact problem. The most obvious step would be to move the label from inside the refrigerator to a prominent position on the outside of the door.

Resistance on the part of retailers to placing the labels on the door might be expected for two reasons. First, there might be a concern regarding damage to the finish of the refrigerator either due to uneven fading or scratching during removal of the label. Second, when refrigerators are displayed in a model kitchen setting, the asthetics of a label on the door would undoubtedly be viewed as undesirable. However, solutions to these kinds of problems are well worth pursuing since the payoffs from this simple change are clear.

A secondary method of increasing EIPS exposure would be through prominently displayed posters that call attention to refrigerator labels. The problem encountered with this device during this study was their non-permanence. Posters and display cards are readily moved to a back corner, particularly when new promotional materials need to be featured.

5.1.4 Increasing Consumer Understanding. The IMPACT model indicates that approximately 5% of refrigerator buyers do not utilize the EIPS because they may not fully understand the information provided by the energy labels (4% perceived small operating cost differences and 1% stated they did not understand the labels).

One method of aiding consumer understanding would be to provide an information pamphlet similar to the "Fuel Consumption Guide" (Transport Canada, 1979). The information would include (1) the energy consumption of each model of refrigerator, (2) electricity costs for major geographic regions in Canada, (3) examples of how to convert kilowatt hour consumption to dollar operating costs, and (4) examples of how to combine operating costs and purchase price to obtain a total cost figure for comparing refrigerator models.

Availability of pamphlets of this type at the point of sale should simplify consumers' assessment of energy consumption across models. The salesperson survey indicated a willingness on the part of retailers to display this type of pamphlet.

5.2 Future Research

The attention to future research needs centered on the ongoing management of the ENERGUIDE program. Because refrigerators represent the first of a series of products that will receive attention under the ENERGUIDE program, evaluation of EIPS on refrigerator purchases is that much more important. The research suggestions that are discussed below indicate two major areas that would facilitate future program management.

Before suggesting specific research areas, a comment regarding the limitation of the current study is warranted. The study that has been presented in this report was limited to consumers who bought refrigerators from one major department store chain. It was also limited to urban cities west of the Great Lakes. Although these limitations do not appear to be serious, future research could direct attention to other geographic regions and classes of appliance retailers.

Two specific types of future research are needed, macro (overall information program effectiveness) and diagnostic (impact of specific initiatives). From a macro perspective, which involves monitoring the general

program of the ENERGUIDE program, the needed research could be achieved by gathering two types of data from refrigerator manufacturers. First, information regarding all new models introduced to the market would indicate the extent to which energy saving features are being emphasized. Second, total unit sales data for each model of refrigerator sold in Canada would indicate the extent to which the refrigerators that consumers purchase have a lower weighted average energy consumption. If the sales data were segmented, differential impact by region could also be assessed.

From a diagnostic perspective there is a need to monitor each initiative used to increase program effectiveness. For example, educating salespeople as to the use of energy information is suggested as a priority initiative. After this has been implemented, research using trained shoppers can be carried out to diagnose the strengths and weaknesses of the initiative. A second initiative that is suggested has the purpose of increasing consumer awareness of the ENERGUIDE labels. After programs to stimulate awareness have been implemented, consumer survey research can be used to evaluate changes.

In summary, ongoing management of the ENERGUIDE Program could be served by two major types of research.

Periodic collection of industrial unit sales figures would indicate overall trends in refrigerator energy consumption. Diagnostic surveys using trained shoppers and consumer interviews would indicate the effectiveness of specific management initiatives.

5.3 EIPS Priorities

It is the researchers' view that the ENERGUIDE label is a good first step towards providing EIPS. Although dollar information might be somewhat easier for consumers to understand, the administrative difficulties associated with providing dollar information do not appear to be counter balanced by potential increases in label impact. The necessity of dollar information on the labels is clearly reduced if an effort is made to encourage retail salespeople to show their customers how refrigerator operating costs compare. Utilization of label information could be improved by increased consumer awareness of the labels such as by moving the label to eye level on the front of the refrigerator. Utilization could also be improved by providing consumers with point of sale pamphlets explaining how ENERGUIDE

information can be used to compare models. Therefore, the following priorities seem appropriate for increasing the impact of ENERGUIDE labels:

- Place primary emphasis on informing retail salespeople on the interpretation and utilizatoin of ENERGUIDE labels.
- Provide retail salespeople with a sales aid that he/she can use to show customers (1) how label information can be converted to operating costs, and (2) how models on display compare.
- Provide consumers with an information pamphlet that explains how to compare refrigerators in terms of operating costs (Pamphlets should be available at point of sale).
- Require placement of ENERGUIDE labels on the outside of the refrigerator door.

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REFRIGERATOR ENERGY CONSUMPTION

FACT SHEET

REFRIGERATOR ENERGY CONSUMPTION FACT SHEET

MODEL	SIZE (cu. ft.)	ENERGY CONSUMPTION (kwh/month)	ANNUAL ELECTRICITY COST 2.5¢/kwh	4¢/kwh	6¢/kwh	est. 10 yr. operating cost	purchase price	total cost
Store brand	10	53	$15.90	$25.44	$38.16			
Brand A	10	54	$16.20	$25.92	$38.88			
Brand B	10	54	$16.20	$25.92	$38.08			
Store brand	13	54	$16.20	$25.92	$38.88			
Brand A	14	86	$25.80	$31.28	$61.92			
Brand B	14	86	$25.80	$31.28	$61.92			
Store brand	12	87	$26.10	$31.76	$62.64			
Store brand	13	132	$49.60	$63.36	$95.04			
Brand A	13	142	$42.60	$68.16	$102.24			
Brand B	13	140	$42.00	$67.20	$100.80			
Store brand	15	145	$43.50	$69.60	$104.40			
Brand A	15	147	$44.10	$70.56	$105.84			
Brand B	15	155	$46.50	$74.40	$113.60			
Store brand	16	146	$43.80	$70.88	$105.12			
Brand B	16	177	$53.10	$84.96	$127.44			
Brand A	17	144	$43.20	$69.12	$103.68			
Brand B	17	144	$43.20	$69.12	$103.68			
Store brand	18	161	$48.30	$77.28	$115.92			
Brand A	19	185	$55.50	$88.80	$133.20			
Brand A	20	162	$48.60	$77.76	$116.64			
Brand B	20	162	$48.60	$77.76	$116.64			
Brand A	21	154	$46.20	$73.92	$110.98			
Brand A	24	163	$48.90	$78.24	$117.36			
Brand C	3.2	-	-	-	-			
Brand C	4.7	-	-	-	-			
Brand C	9.6	102	$30.60	$48.96	$73.44			
Brand C	10.8	86	$25.80	$41.28	$61.92			

CONSUMER QUESTIONNAIRE

The University of Manitoba
Faculty of Administrative Studies

Department of Business Administration Winnipeg, Manitoba R3T 2N2

November, 1978

Please read this letter carefully.

THE STUDY

- The enclosed questionnaire is part of a study we are conducting to learn about the experiences and opinions of consumers who have recently shopped for and purchased a refrigerator. The study is sponsored by the Department of Consumer and Corporate Affairs.
- Based on information obtained through the cooperation of major department stores and appliance manufacturers we compiled a list of recent refrigerator buyers from major cities across western Canada.
- From this list we selected a small number of refrigerator buyers to represent each major city.

YOUR HELP

- We find that you have recently purchased a refrigerator in your city.
- We would appreciate your completing the enclosed questionnaire and returning it to us in the stamped, self-addressed envelope provided. Please respond as soon as possible.
- Your response is very important to our study since we are sampling only a small number of recent refrigerator buyers in your city and we want to learn as much as possible about what experiences and opinions people have when buying this product.

A TOKEN OF OUR APPRECIATION

- As a small token of appreciation for your assistance we will draw two names from those who complete and return the questionnaire. Both persons whose names are drawn will receive a $200 Canada Savings Bond. The form on the last page of the questionnaire will be used as an entry for the draw.

Thank you very much for your help.

Sincerely,

Dennis Anderson, Ph.D.
Assistant Professor

/af

INSTRUCTIONS FOR COMPLETING THE QUESTIONNAIRE

1. The person completing this questionnaire should be the one who was most actively involved in shopping for the refrigerator. If the lady of the house did most of the shopping, she should be the one to complete the questionnaire. If the man of the house did most of the shopping he should complete it. If both were actively involved, you might want to complete the questionnaire together.

2. Please complete all questions in the order that they appear in the questionnaire.

3. Please complete the draw entry form on the last page so that you will be eligible to win one of the $200 Canada Savings Bonds.

4. Please return the completed questionnaire as soon as possible, using the self-addressed, stamped envelope that we have provided.

SECTION ONE: YOUR NEW REFRIGERATOR

1. What brand of refrigerator did you buy? (check one)

- ☐ Kenmore
- ☐ General Electric
- ☐ Hotpoint
- ☐ Inglis
- ☐ Viking
- ☐ Other (please specify) _____

2. What is the approximate size of your new refrigerator? (check one)

cubic feet 10 11 12 13 14 15 16 17 18 19 20 21

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

- ☐ Other (please specify) _____
- ☐ Not sure

3. What type of defrost system does this refrigerator have? (check one)

- ☐ Frost-free defrost
- ☐ Manual defrost
- ☐ Not sure

SECTION TWO: SELECTING YOUR REFRIGERATOR

4. Different people consider different features when selecting a refrigerator. Below is an alphabetic list of features that you may or may not have considered important when you where choosing your refrigerator.

For each feature (circle) the number that you feel indicates how important that feature was to you (the smaller the number the less important; the bigger the number the more important).

FEATURE	IMPORTANCE WHEN CHOOSING REFRIGERATOR: Not at all Important				Extremely Important
Arrangement of shelves, compartments	1	2	3	4	5
Brand name	1	2	3	4	5
Butter conditioner	1	2	3	4	5
Cantilever shelves	1	2	3	4	5
Colour	1	2	3	4	5
Dual temperature controls	1	2	3	4	5
Easy-roll casters	1	2	3	4	5
Fan motor	1	2	3	4	5
Interior wall construction (porcelain or metal	1	2	3	4	5
Low price	1	2	3	4	5
Meat keeper	1	2	3	4	5
Number & arrangement of shelves	1	2	3	4	5
Operating cost (electricity used)	1	2	3	4	5
Outside dimensions	1	2	3	4	5
Thin-wall construction	1	2	3	4	5
Total storage capacity	1	2	3	4	5
Type of defrost (frost-free or manual)	1	2	3	4	5
Type of insulation	1	2	3	4	5
Warranty	1	2	3	4	5
Other considerations? (If so, specify and circle).					
_____	1	2	3	4	5
_____	1	2	3	4	5
_____	1	2	3	4	5

SECTION THREE: ALTERNATIVES CONSIDERED

5. When shopping for your refrigerator , how many other brands did you seriously consider? (check one)

- ☐ Considered no brands except the brand purchased.
- ☐ Considered one brand in addition to the one purchased.
- ☐ Considered two or more other brands.

Please list other brand (or brands). _____

6. When shopping for your refrigerator, how many other sizes (cubic foot capacity) did you seriously consider? (check one)

- ☐ Considered no sizes except the size purchased.
- ☐ Considered both smaller and larger refrigerators.
- ☐ Considered smaller refrigerators.
- ☐ Considered larger refrigerators.

Please indicate other size (or sizes). _____

7. When shopping for your refrigerator, which type of defrost system did you seriously consider? (check one)

- ☐ Considered only manual defrost
- ☐ Considered only frost-free
- ☐ Considered both manual and frost-free defrost

8. Where did you buy this refrigerator?

Store name? _____

Store location (name of street or shopping centre)? _____

9. When shopping for your refrigerator, how many other stores did you visit? (check one)

- ☐ Visited no stores except where refrigerator purchased.
- ☐ Visited one store in addition to where refrigerator purchased.
- ☐ Visited two or more other stores.

- Please list other stores:

Store Name	Store Location (name of street or shopping center)
_____	_____
_____	_____
_____	_____
_____	_____

10. Have you purchased other major kitchen appliances from the same store (or same retail chain) where your new refrigerator was purchased?

☐ Yes ☐ No

- If yes, which other major appliances did you purchase from this same store or chain?

_____

_____

_____

_____

SECTION FOUR: EXPERIENCE WITH SALESPERSON

11. Now some information about your experience with the salesperson that sold you your refrigerator. Please indicate how much you agree or disagree with each of the following statements. (check one box for each of the 7 statements)

	strongly disagree	disagree	neither agree nor disagree	agree	strongly agree
a. Salesperson was readily available when needed.	☐	☐	☐	☐	☐
b. Salesperson was very friendly	☐	☐	☐	☐	☐
c. Salesperson was very knowledgeable about refrigerators.	☐	☐	☐	☐	☐
d. Salesperson made many useful suggestions.	☐	☐	☐	☐	☐
e. Salesperson carefully pointed out and explained differences among refrigerators.	☐	☐	☐	☐	☐
f. Salesperson provided useful printed information for me to take home.	☐	☐	☐	☐	☐
g. Salesperson's advice was very important in my choice of refrigerators.	☐	☐	☐	☐	☐

What product features did this salesperson emphasize when selling you your refrigerator? _____

_____

_____

SECTION FIVE: OVERALL FEELINGS ABOUT PURCHASE

12. Overall, how satisfied are you with your new refrigerator?

- ☐ Very satisfied
- ☐ Somewhat satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Somewhat dissatisfied
- ☐ Very dissatisfied

13. Overall, how satisfied are you with the store where you bought your refrigerator?

- ☐ Very satisfied
- ☐ Somewhat satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Somewhat dissatisfied
- ☐ Very dissatisfied

14. When buying your refrigerator did you have any major problems with such things as the information availability, the product selection, the sales staff, the delivery, etc. Please comment:

_____

_____

_____

_____

SECTION SIX: REASONS FOR PURCHASE

15. Where will the new refrigerator be used? (check one)

- ☐ In my kitchen
- ☐ In recreation room or family room
- ☐ In cottage or recreation home
- ☐ In a rental suite
- ☐ Other (please specify) _____

16. Was the new refrigerator bought as a replacement for another one?

☐ Yes ☐ No (If no, go to question 19)

- If yes, please describe old refrigerator

size? (check one)

- ☐ Smaller than new one
- ☐ Same size
- ☐ Larger than new one

- approximate age? _____
- brand _____
- type of defrost
  - ☐ manual
  - ☐ automatic
  - ☐ frost-free

- what did you do with the old one?
  - ☐ Use it elsewhere in the house
  - ☐ Gave it away
  - ☐ Broken (of no value)
  - ☐ Traded it in, or sold it
  - ☐ Other (please specify) _____

17. Overall, how satisfied were you with your old refrigerator?

- ☐ Very satisfied
- ☐ Somewhat satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Somewhat dissatisfied
- ☐ Very dissatisfied

18. What was the major reason for buying a new refrigerator at this time?

- ☐ Old one broke down
- ☐ Wanted a newer refrigerator with new features
- ☐ Moved to a new residence that had no refrigerator
- ☐ Other (please specify) _____

19. How many years would you expect your new refrigerator to last you? ____YEARS
(Although this is difficult to estimate, please give your best guess).

20. Is this the first refrigerator you have ever bought?

☐ Yes ☐ No (If no, how long ago did you buy your last one?
____YRS. AGO)

21. Do you own a freezer?

☐ No ☐ Yes (If yes, what size? _____ CUBIC FEET)

SECTION SEVEN : ELECTRICAL ENERGY

22. There has been considerable discussion recently about a possible energy shortage in Canada. Five years from now, do you think there will be a very serious shortage of energy, a quite serious shortage or no real shortage of energy? (please check one)

- ☐ Very serious shortage
- ☐ Quite serious shortage
- ☐ No real shortage
- ☐ Don't know

23. Are you aware of your residential electricity rate (that is, are you aware how much you pay per kilowatt hour for electricity)?

- ☐ No, I am not aware of the rate
- ☐ Yes, the rate is _____ per kilowatt hour.

24. Do you feel that consumers would make serious efforts to purchase energy-efficient refrigerators if they knew which models used less electricity?

☐ Yes ☐ No

25. Based on your experience in shopping for a refrigerator, what degree of difference would you expect that there would be in the cost of operation (electricity costs) among refrigerators available today? Please circle.

No Difference At All — Very Large Differences

1 2 3 4 5

26. What dollar difference would you expect that there would be in the yearly cost of operation from one refrigerator to another?

I would expect that there would be $_____ dollars per year difference in cost of operation (electricity costs) among refrigerators available today.

27. Assume that you were shopping and found two refrigerators (A and B) that were the same except for their purchase price and the fact that:

- refrigerator A cost $75/year to operate for each year of its life
- refrigerator B cost $50/year to operate for each year of its life

How much higher purchase price would you be willing to pay for B (the one that uses less electricity)? I would pay an extra $ _____ in purchase price for B because it costs $25 less to operate each year.

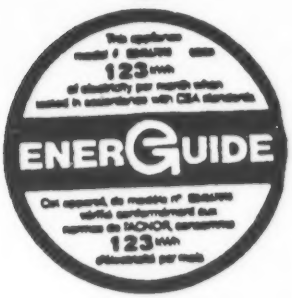
28. Do you feel that the government should make energy consumption labels a requirement on all major appliances sold in Canada?

☐ Yes ☐ No

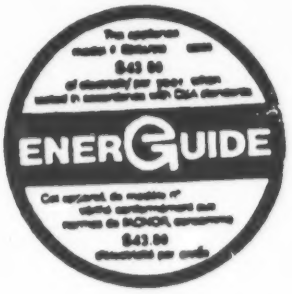
SECTION EIGHT: ENERGY CONSUMPTION LABELS

Now your opinions about energy consumption labels on refrigerators. Below are two types of labels that have appeared on some refrigerators

LABEL 'A'



LABEL 'B'



29. When you were shopping for your new refrigerator did you see labels such as these on any of the refrigerators in the store where you made your purchase?

- ☐ Yes, I saw labels like LABEL 'A'.
- ☐ Yes, I saw labels like LABEL 'B'.
- ☐ No, I saw no energy labels (If no, go to question 30)

If yes, please continue

- How did the labels come to your attention? (check one)
  ☐ Noticed on my own ☐ Salesperson pointed them out
- Did the salesperson explain the labels to you? (check one)
  ☐ Yes ☐ No
- Did you feel that the labels were understandable? (check one)
  ☐ Yes ☐ No
- Do you recall the energy consumption of your new refrigerator? (check one)
  ☐ Yes, the rating was _____ ☐ No, I do not recall
- As best you can recall, did there seem to be large, medium or small differences in energy consumption from one refrigerator to another? (check one)
  ☐ Large differences
  ☐ Medium differences
  ☐ Small differences
- Was the information on the energy label an important consideration in your choice of which refrigerator to buy? (check one)
  ☐ Not at all important
  ☐ A minor consideration
  ☐ One of a few major considerations
  ☐ The most important consideration

30. Please go back and look carefully at LABEL 'A' and LABEL 'B'. Which of these two do you feel consumers would find most useful? (check one)

- ☐ LABEL 'A'
- ☐ LABEL 'B'
- ☐ Both equally satisfactory
- ☐ Neither satisfactory

SECTION NINE: PURCHASE CHOICE TRADE-OFFS

31. The last few pages have asked questions about your recent refrigerator purchase. The next page is a little different. We would like you to suppose that you were just now choosing a refrigerator. We have listed 10 pairs of refrigerators. For each pair we would like you to choose either A or B. They are both the same size (capacity), and both have the same features. Both could be expected to last 10 to 15 years. The differences between the two units are that:

- they may be either manual or frost-free defrost
- they may have different operating costs (electricity consumption)
- they may have different purchase prices

EXAMPLE: For the pair below you would have to decide whether or not you would rather pay $850 rather than $700, so that you could save $20 a year operating cost over the life of the refrigerator. If you preferred "A", you would check the box as indicated below:

REFRIGERATOR A		REFRIGERATOR B
Frost-free operating cost: $90 a year purchase price: $700 A ☑	OR	Frost-free operating cost: $70 a year purchase price: $850 B ☐

Below are 10 pairs of refrigerator choices. Please check ☑ either refrigerator A, or refrigerator B for each of the ten pairs.

	REFRIGERATOR A		REFRIGERATOR B
PAIR ONE: - would you prefer A or B?	Frost-free operating cost: $55 a year purchase price: $600 A ☐	OR	Frost-free operating cost: $40 a year purchase price: $800 B ☐
PAIR TWO: - would you prefer A or B?	Frost-free operating cost: $70 a year purchase price: $600 A ☐	OR	Frost-free operating cost: $40 a year purchase price: $800 B ☐
PAIR THREE: - would you prefer A or B?	Frost-free operating cost: $70 a year purchase price: $600 A ☐	OR	Frost-free operating cost: $55 a year purchase price: $800 B ☐
PAIR FOUR: - would you prefer A or B?	Manual defrost operating cost: $25 a year purchase price: $400 A ☐	OR	Frost-free operating cost: $40 a year purchase price: $400 B ☐
PAIR FIVE: - would you prefer A or B?	Manual defrost operating cost: $25 a year purchase price: $400 A ☐	OR	Frost-free operating cost: $55 a year purchase price: $400 B ☐
PAIR SIX: - would you prefer A or B?	Manual defrost operating cost: $25 a year purchase price: $400 A ☐	OR	Frost-free operating cost: $70 a year purchase price: $400 B ☐
PAIR SEVEN: - would you prefer A or B?	Manual defrost operating cost: $25 a year purchase price: $400 A ☐	OR	Frost-free operating cost: $25 a year purchase price: $600 B ☐
PAIR EIGHT: - would you prefer A or B?	Manual defrost operating cost: $25 a year purchase price: $400 A ☐	OR	Frost-free operating cost: $40 a year purchase price: $600 B ☐
PAIR NINE: - would you prefer A or B?	Manual defrost operating cost: $25 a year purchase price: $400 A ☐	OR	Frost-free operating cost: $55 a year purchase price: $600 B ☐
PAIR TEN: - would you prefer A or B?	Manual defrost operating cost: $25 a year purchase price: $400 A ☐	OR	Frost-free operating cost: $70 a year purchase price: $600 B ☐

SECTION TEN: STATISTICAL INFORMATION

The following information will be used for statistical analyses. All responses will be coded anonymously and kept in strict confidence by the researchers.

32. What is the age of the head of the household?

- ☐ under 25 years
- ☐ 25 to 34 years
- ☐ 35 to 44 years
- ☐ 45 to 54 years
- ☐ 55 years and over

33. What is the number of people living at home in your household? _____

34. Are you

- ☐ Married ?
- ☐ Widowed ?
- ☐ Divorced/Separated ?
- ☐ Common law ?
- ☐ Single ?

35. Are you

- ☐ Male ?
- ☐ Female ?

36. What level of education has the head of the household completed?

- ☐ No formal schooling
- ☐ Some public school
- ☐ Completed public school
- ☐ Some secondary school
- ☐ Graduated secondary school
- ☐ Some technical school
- ☐ Graduated technical school
- ☐ Some university
- ☐ Graduated university
- ☐ Post-graduate degree

37. What is your employment status?

- ☐ Work full-time
- ☐ Work part-time
- ☐ Do not work outside the home

38. What is the employment status of your spouse?

- ☐ Works full-time
- ☐ Works part-time
- ☐ Does not work outside the home
- ☐ No spouse

39. In what group is your annual <u>family</u> income before taxes?

- ☐ Less than $3,000
- ☐ $3,000 to $4,999
- ☐ $5,000 to $7,499
- ☐ $7,500 to $9,999
- ☐ $10,000 to $12,499
- ☐ $12,500 to $14,999
- ☐ $15,000 to $17,499
- ☐ $17,500 to $19,999
- ☐ $20,000 to $24,999
- ☐ $25,000 to $29,999
- ☐ $30,000 to $34,999
- ☐ $35,000 or more

40. What is your occupation?

- ☐ Student
- ☐ Unemployed
- ☐ Pensioned/Retired
- ☐ Homemaker, widow/spinster living on income
- ☐ Farmer
- ☐ Unskilled labour
- ☐ Skilled labour
- ☐ Clerical worker
- ☐ Salesperson
- ☐ Business executive, owner, manager
- ☐ Professional

41. What is the occupation of your spouse?

- ☐ Student
- ☐ Unemployed
- ☐ Pensioned/Retired
- ☐ Homemaker, widow/spinster living on income
- ☐ Farmer
- ☐ Unskilled labour
- ☐ Skilled labour
- ☐ Clerical worker
- ☐ Salesperson
- ☐ Business executive,owner,manager
- ☐ Professional

42. What type of dwelling do you live in?

- ☐ House
- ☐ Apartment or flat
- ☐ Duplex, triplex, 4-plex
- ☐ Townhouse, rowhouse
- ☐ Condominium townhouse, rowhouse
- ☐ Condominium apartment
- ☐ Mobile home

43. How long have you lived there?

- ☐ less than one year
- ☐ one year
- ☐ two years
- ☐ three years
- ☐ four to five years
- ☐ six to seven years
- ☐ eight to ten years
- ☐ eleven to twenty years
- ☐ more than twenty years

Thank-you for your time and patience in completing this questionnaire. Please ensure you have completed all the questions before returning the questionnaire.

* *

DRAW ENTRY FORM

Please complete this entry form so your name can be included in the draw for one of the two $200 Canada Savings Bonds. All questionnaires returned BY DECEMBER 22, 1978 will be included in the draw.

NAME: Mr. / Mrs. / Miss/Ms. _____

ADDRESS: _____
(street, etc.)

_____
(city) (province)

_____ _____
(postal code) (phone)

SALESPERSON QUESTIONNAIRE

The University of Manitoba
Faculty of Administrative Studies

Department of Business Administration

Winnipeg, Manitoba R3T 2N2

MEMORANDUM

To: Appliance Sales Staff
Eaton's, Western and B.C.
Regions

From: Dennis Anderson,
Faculty of Administrative Studies,
University of Manitoba

John Claxton,
Faculty of Commerce,
University of B.C.

December 10, 1978

As you may know, we have recently completed a study of energy labels on refrigerators, in co-operation with Eaton's and the Federal Department of Consumer and Corporate Affairs.

In a nutshell, the study (carried out in the larger Eaton's stores from Thunder Bay to Victoria) involved trying one energy consumption label in one set of stores, a second label in a second set of stores, and no labels in a third set of stores. We then interviewed customers who had purchased refrigerators from each set of stores. We are currently completing this customer data collection phase.

However, our study would not be complete without the views of people most experienced in refrigerator sales, the sales staff. To achieve this we would appreciate your completing the enclosed questionnaire and returning it to us in the pre-stamped, self-addressed envelope provided.

As a small token of our appreciation for your assistance we will draw a name from those who complete and return the questionnaire before January 5, 1978 and award that salesperson a $100 cash prize. The form on the last page of the questionnaire will be used as an entry form for the draw. Since you may wish to detach the draw entry form and mail it separately, a second return envelope has been provided.

Please complete this questionnaire today, or at your first opportunity this week. We hope to have all responses returned before the end of December. Thank you for your co-operation.

Sincerely,

Dennis Anderson.

Dennis Anderson

John Claxton

Instructions for Completing the Questionnaire:

- You should complete a questionnaire whether or not energy labels were put on the refrigerators in your store during the study.
- Please complete all questions that apply to you.
- Return the completed questionnaire to us in one of the self-addressed, stamped envelopes that we have provided.
- Please complete the draw entry form (for $100 cash prize) on the last page of the questionnaire. You can mail this form to us separately, using the second return envelope provided.

SECTION ONE: YOUR EXPERIENCE WITH REFRIGERATOR ENERGY LABELS.

Note: If we did not put ENERGUIDE energy labels on the refrigerators in your store, please go to SECTION TWO.

1. Please comment on your experience with the ENERGUIDE labels over the six weeks that they were on the refrigerators in your store:

- Did any customers look at the ENERGUIDE labels on the refrigerators?

  ___ NO
  ___ YES; If yes, what percentage of customers looked at the labels? _____ %

- Did any customers seem to consider the energy consumption information on the ENERGUIDE labels as one of the key factors in deciding which refrigerator to choose?

  ___ NO
  ___ YES; If yes, what percentage of customers seemed to consider the energy consumption of the refrigerator as one of the key factors in their choice? _____ %

- What difficulties, if any, did you have in explaining the ENERGUIDE labels to customers? _____

- Do you have any other comments on the ENERGUIDE labels?

SECTION TWO: GENERAL QUESTIONS ABOUT YOUR SALES PRESENTATION TO PEOPLE SHOPPING FOR A REFRIGERATOR.

2. Below is an alphabetical list of features that may or may not be considered important by people shopping for a refrigerator.

For each feature circle the number that you feel indicates how important that feature usually is to your customers (the smaller the number the less important; the bigger the number the more important).

FEATURE	IMPORTANCE TO CUSTOMERS WHEN CHOOSING REFRIGERATOR Not at all important				Extremely important
Brand name	1	2	3	4	5
Butter conditioner	1	2	3	4	5
Cantilever shelves	1	2	3	4	5
Colour	1	2	3	4	5
Dual Temperature Controls	1	2	3	4	5
Easy-roll casters	1	2	3	4	5
Ice maker	1	2	3	4	5
Interior wall construction (porcelain or metal)	1	2	3	4	5
Low price	1	2	3	4	5
Meat keeper	1	2	3	4	5
Number & arrangement of shelves	1	2	3	4	5
Operating cost (electricity used)	1	2	3	4	5
Outside dimensions	1	2	3	4	5
Thin-wall construction	1	2	3	4	5
Total storage capacity	1	2	3	4	5
Type of defrost (frost-free or manual)	1	2	3	4	5
Type of insulation	1	2	3	4	5
Warranty	1	2	3	4	5
Other considerations? (If so, specify and circle).					
_____	1	2	3	4	5
_____	1	2	3	4	5
_____	1	2	3	4	5

3. When a customer asks about a manual defrost refrigerator, what sales points or product features do you usually emphasize?

_____

_____

_____

4. When a customer asks about a <u>frost-free</u> defrost refrigerator, what sales points or product features do you <u>usually</u> emphasize?

_____

_____

_____

5. If a customer was interested in a manual defrost refrigerator, would it <u>usually</u> be easy or difficult for you to shift his/her interest to a frost-free model? (check one)

Very Difficult	Somewhat Difficult	So-so	Somewhat Easy	Very Easy
—	—	—	—	—

6. If a customer was interested in a frost-free defrost refrigerator, would it <u>usually</u> be easy or difficult for you to shift his/her interest to a manual defrost model? (check one)

Very Difficult	Somewhat Difficult	So-so	Somewhat Easy	Very Easy
—	—	—	—	—

SECTION THREE: REFRIGERATOR ENERGY CONSUMPTION

7. What percentage of customers ask you about the amount of electricity it takes to operate the various makes and models of refrigerators?

___	0%	___	11 to 20%	___	41 to 50%
___	1 to 5%	___	21 to 30%	___	51 to 75%
___	6 to 10%	___	31 to 40%	___	75 to 100%

8. With what percentage of your customers do you discuss (without being asked) the amount or cost of electricity it takes to operate the various makes and models of refrigerators?

___	0%	___	11 to 20%	___	41 to 50%
___	1 to 5%	___	21 to 30%	___	51 to 75%
___	6 to 10%	___	31 to 40%	___	75 to 100%

9. If a customer asked you about the amount or cost of electricity it takes to operate the various makes and models of refrigerators, what sales points would you make? (That is, what information would you give the customer?)

_____
_____
_____
_____
_____

10. If a customer asked for an estimate of the dollar difference in yearly electricity costs between a 13 cu. ft. manual and a 13 cu. ft. frost-free refrigerator, what would your best guess be? (Fill in the blank).

The manual would be approximately _____ dollars a year cheaper to operate.

11. If a customer asked for an estimate of the dollar difference in yearly electricity costs among the various models and brands of frost-free refrigerators, what would your best guess be? (Fill in the blank).

For frost-free refrigerators the range in electricity cost between the cheapest to operate and the most expensive to operate would be approximately _____ dollars a year.

SECTION FOUR: ELECTRICAL ENERGY

12. There has been considerable discussion recently about a possible energy shortage in Canada. Five years from now, do you think there will be a very serious shortage of energy, a quite serious shortage or no real shortage of energy? (check one)

___ Very serious shortage
___ Quite serious shortage
___ No real shortage
___ Don't know

13. Do you believe that the energy consumed by home appliances is a significant factor in the energy problem?

___ Yes ___ No

14. Are you aware of your residential electricity rate (that is, are you aware how much you pay per kilowatt hour for electricity)?

___ No, I am not aware of the rate.
___ Yes, the rate is _____ per kilowatt hour.

15. Do you feel that consumers would make serious efforts to purchase energy-efficient refrigerators if they knew which models used less electricity?

___ Yes ___ No

16. Suppose a customer was considering two refrigerators (A and B) that were the same except for their purchase price and the fact that:
. refrigerator A cost $75/year to operate <u>for each year</u> of its life
. refrigerator B cost $50/year to operate <u>for each year</u> of its life

How much higher purchase price would you think a customer would be willing to pay for B (the one that uses less electricity)? (Fill in the blank).

A customer would likely pay an extra $ _____ in purchase price for B because it costs $25 less to operate each year.

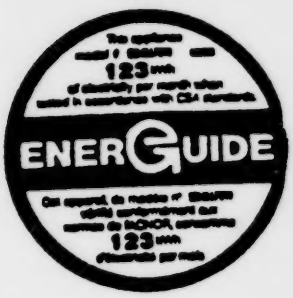
SECTION FIVE: ENERGY CONSUMPTION LABELS

17. Did you know that the Canadian government is developing a labeling program to put labels on refrigerators and other major appliances to tell consumers how much energy each model uses?

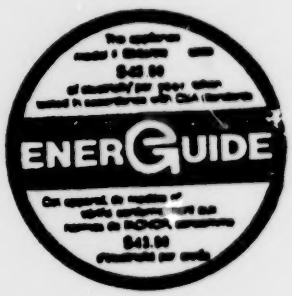
___ Yes ___ No

- Below are two alternative types of labels that might appear on refrigerators in the near future.

LABEL 'A'



LABEL 'B'



Actual size: 5" in diameter

18. Which of these two do you feel consumers would find more useful? (check one)

___ LABEL 'A'
___ LABEL 'B'
___ Both equally satisfactory
___ Neither satisfactory

19. To be most effective, where on the refrigerator should these labels be located?

___ By the serial number plate
___ On the outside of the door at eye level
___ On the inside wall of the refrigerator
___ On the price tag
___ Other (specify) _____

20. Would you personally be in favor of a labeling program that required ENERGUIDE labels on all <u>refrigerators</u> sold in Canada?

___ Yes ___ No

Why/why not? _____

_____

SECTION SIX: ENERGY FACT SHEET

Below is a list of energy consumption figures for most of the refrigerators sold in your store. Please study this information.

Note that:

- . manual defrost models are listed first, followed by the "all refrigerator" model followed by frost-free models
- . energy consumption is given in kilowatt hours per month (kwh/mo) and in dollars per year ($/yr)
- . all model numbers are not listed, however the same energy consumption figure applies to all models of a particular size and brand. For example, all models of G.E. 17 cu.ft. would have the same energy consumption.

Refrigerator Energy Consumption Fact Sheet

Model		Size (nearest cu. ft.)	Energy Consumption (kilowatt hrs./month)	Yearly Electricity Cost @ 2.5c per kilowatt hour
Manual Defrost:				
Viking	DR810M	10	53	$15.90
G.E.	L10AZR	10	54	$16.20
Moffat	MRM1018	10	54	$16.20
Viking	DR813M	13	54	$16.20
G.E.	L14AZR	14	86	$25.80
Moffat	MRM1418	14	86	$25.80
Push Button Defrost:				
Danby	B811P	11	86	$25.80
Automatic Defrost:				
Danby	B896	10	102	$30.60
All Refrigerator:				
Viking	DR812R	12	87	$26.10
Frost Free Defrost:				
Viking	DRS813F	13	132	$39.60
Viking	DR813F	13	132	$39.60
G.E.	L13JER	13	142	$42.60
Moffat	MRF 1355	13	140	$42.00
Moffat	MRF-MLF 1368	13	140	$42.00
Moffat	MRF 1328	13	140	$43.50
Viking	DRS815F	15	145	$43.50
Viking	DR815F	15	145	$44.10
G.E.	L15JTR	15	147	$44.10
G.E.	L15JER	15	147	$44.10
G.E.	L15JAR	15	147	$44.10
G.E.	L15JCW	15	147	$44.10
Moffat	MRF-MLF 1578	15	155	$46.50
Moffat	MRF 1538	15	155	$46.50
Viking	DR816FBG	16	146	$43.80
Viking	DR816F	16	146	$43.80
Moffat	MRF 1675	16	177	$53.10
Moffat	MRF 1688	16	177	$53.10
Moffat	MRF-MLF 1638	16	177	$53.10
G.E.	L17JTR	17	144	$43.20
G.E.	L17JER	17	144	$43.20
G.E.	L17JAR	17	144	$43.20
G.E.	L17JBR	17	144	$43.20
Moffat	MRF-MLF 1788	17	144	$43.20
Moffat	MRF-MLF 1758	17	144	$43.20
Viking	DR818 83F	18	161	$48.30
Viking	DR818 83BG	18	161	$48.30
G.E.	L19FAR	19	185	$55.50
G.E.	L19FBR	19	185	$55.50
G.E.	L20JAR	20	162	$48.60
Moffat	MRF 2088	20	162	$48.60
G.E.	TBF21RW	21	154	$46.20
G.E.	TFF24RW	24	163	$48.90

21. Do you feel that the government should make energy consumption labels a requirement on all major appliances sold in Canada?

___ Yes ___ No

22. Do you think such a program would eventually reduce the amount of home appliance energy consumption if utilized on all major appliances?

___ Yes ___ No

Why/why not? _____

_____

_____

_____

23. If a booklet were available explaining the energy efficiency of refrigerators, would you put the booklets on public display for customers to read as they shop?

___ Yes ___ No

_____

24. Is there anything about the "Fact Sheet" that is confusing or hard to understand?

___ Yes ___ No

If yes, what? _____

25. Does the "Fact Sheet" information seem believable and accurate to you?

___ Yes ___ No

If no, why not? _____

26. Would you use this information in your sales presentation to a prospective refrigerator buyer?

___ Yes... If yes, how would you use it; what would you emphasize?

_____

___ No... If no, why not?

_____

SECTION SEVEN: STATISTICAL INFORMATION

The following section will be needed for statistical analysis. All responses will be coded anonymously and kept in strict confidence by the researchers.

27. Name and location of the store where you work _____

28. Full time or part time? ___ Full time ___ Part time

29. What products do you sell?

___ Refrigerators ___ Washers ___ Stereo equipment
___ Freezers ___ Dryers ___ TV
___ Ranges ___ Air Conditioners ___ Small Appliances
___ Dishwashers ___ Furniture
___ Other (specify) _____

30. How many years of experience do you have as a salesperson? _____ yrs.

31. How many years of experience do you have selling major appliances? _____ yrs.

32. Approximately how many refrigerators do you sell in a year? ____ per year.

33. What is your approximate yearly income (before taxes) from selling in the store?

___ Less than $3,000 ___ $15,000 to $17,499 ___ $40,000 to $44,999
___ $3,000 to $4,999 ___ $17,500 to $19,999 ___ $45,000 to $49,999
___ $5,000 to $7,499 ___ $20,000 to $24,999 ___ $50,000 to $54,999
___ $7,500 to $9,999 ___ $25,000 to $29,999 ___ $55,000 or more
___ $10,000 to $12,499 ___ $30,000 to $34,999
___ $12,500 to $14,999 ___ $35,000 to $39,999

34. Sex? ___ Female ___ Male

35. Age?

___ Under 25 years
___ 25 to 34 years
___ 35 to 44 years
___ 45 to 54 years
___ 55 years and over

36. Education?

___ No formal schooling ___ Some technical school
___ Some public school ___ Graduated technical school
___ Completed public school ___ Some university
___ Some secondary school ___ Graduated university
___ Graduated secondary school ___ Post-graduate degree

37. Have you had any formal sales training?

___ Yes ___ No

If yes, explain type and length of training _____

_____

_____

_____

_____

- -

(detach here and mail separately if you wish)

DRAW ENTRY FORM

STORE: _____

SALESPERSONS NAME: _____

PHONE NUMBER: _____

- -

TEST SHOPPER'S

POST SHOPPING TRIP

RECORD

TEST SHOPPER'S POST-SHOPPING TRIP RECORD

SHOPPER: _____

STORE & CITY: _____

DATE & TIME OF TRIP: _____

1. What models did he show you (record brand & cu. ft.)?

_____ _____

_____ _____

_____ _____

_____ _____

2. What product features did he discuss (check ( ) features discussed)?

1. Size (cu. ft.) ___
2. Price ___
3. Brand ___
4. Butter keeper ___
5. Ice maker ___
6. Type of shelves ___
7. Special food containers ___
9. Overall dimensions ___
10. Insulation ___
11. Wall thickness ___
12. Warranty ___
13. Construction materials (porcelain/metal/plastic) ___
14. Operating cost or energy consumption ___
15. Manual vs. frost free defrost ___
16. Castors ___

3. Did he ask whether you would consider a manual defrost, or else suggest that you could consider a manual defrost?

Yes ___ No ___

4. Did he volunteer information on energy consumption or energy costs?

Yes ___ No ___

If yes, what? _____

_____

_____

5. Did he also make model comparisons regarding energy consumption?

Yes ___ No ___

If yes, what comparisons information did he give you? _____

_____

_____

6. Was the Energuide label present on the models you looked at?

Yes ___ No ___

7. Did the salesman draw your attention to the Energuide label?

Yes ___ No ___

8. Did he interpret the label for you? Yes ___ No ___

If yes, what did he say? _____

_____

_____

9. Did he voluntarily provide you with printed energy consumption/cost information for you to take home? Yes ___ No ___
(If so attach to this form)

10. What did he say when you asked about the efficiency of operation?

_____

_____

_____

_____

11. What did he say when you asked him what the Energuide sticker was?

_____

_____

_____

_____

12. What did he say when you asked if he had any printed information on energy consumption that you could take home? (attach any given)

_____

_____

_____

_____

13. Was salesman able to explain energy consumption in a way that was clear and simple for the customer? (comment)

_____

_____

_____

14. Other comments on the salesman: (Circle number you feel is appropriate)

Very uninformed 1 2 3 4 5 6 7 8 9 10 Very informed

Very unfriendly 1 2 3 4 5 6 7 8 9 10 Very friendly

What brand and features did he "push?" _____

_____

_____

_____

_____

CONSUMER SURVEY FREQUENCIES

TABLE 1.1

FREQUENCY DISTRIBUTION FOR THE TYPE OF REFRIGERATOR PURCHASED

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(1) Size of Refrigerator:				
	3 cu. ft.	1	0.3	0.3
	5 cu. ft.	6	2.0	2.0
	8 cu. ft.	1	0.3	0.3
	10 cu. ft.	12	4.0	4.0
	11 cu. ft.	3	1.0	1.0
	12 cu. ft.	25	8.3	8.3
	13 cu. ft.	31	10.2	10.2
	14 cu. ft.	1	0.3	0.3
	15 cu. ft.	49	16.2	16.2
	16 cu. ft.	113	37.3	37.3
	17 cu. ft.	36	11.9	11.9
	18 cu. ft.	14	4.6	4.6
	19 cu. ft.	4	1.3	1.3
	20 cu. ft.	2	0.7	0.7
	21 cu. ft.	1	0.3	0.3
	22 cu. ft.	1	0.3	0.3
	24 cu. ft.	2	0.7	0.7
	25 cu. ft.	1	0.3	0.3
	TOTAL	303	100.0	100.0
	MEAN: 15.017	MODE: 16.000		MEDIAN: 15.699
(2) Defrost system:				
	FROST FREE	275	90.8	90.8
	MANUAL DEFROST	28	9.2	9.2
	TOTAL	303	100.0	100.0

TABLE 1.1 (cont'd)

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(3) Energy consumption: (kilowatt-hours per month)				
	53 kwh/month	10	3.3	3.4
	54	7	2.3	2.4
	86	4	1.3	1.4
	87	25	8.3	8.6
	102	2	0.7	0.7
	132	11	3.6	3.8
	140	13	4.3	4.5
	144	36	11.9	12.4
	145	14	4.6	4.8
	146	69	22.8	23.8
	147	34	11.2	11.7
	155	1	0.3	0.3
	161	14	4.6	4.8
	162	2	0.7	0.7
	163	1	0.3	0.3
	177	43	14.2	14.8
	185	4	1.3	1.4
	No data	13	4.3	MISSING
	TOTAL	303	100.0	100.0
	MEAN: 139.434	MODE: 146.000		MEDIAN: 145.833

TABLE 1.2

FREQUENCY DISTRIBUTION FOR IMPORTANCE
OF FEATURES WHEN SELECTING A REFRIGERATOR

FEATURE (In order of importance)	Percentage Response Distribution								
	Not at all important				Extremely important		% No Data	Mean	Rank
	1	2	3	4	5	Total			
Type of defrost (frost free or manual)	3.8	3.1	7.2	15.2	70.7	100.0	4.3	4.459	1
Warranty	3.1	1.4	10.4	23.5	61.6	100.0	4.6	4.391	2
Total storage capacity	4.2	4.2	17.5	27.3	46.9	100.0	5.6	4.084	3
Colour	10.4	6.3	13.2	21.9	48.3	100.0	5.0	3.913	4
Arrangement of shelves, compartments	3.9	5.6	25.4	28.2	37.0	100.0	6.3	3.887	5
Number and arrangement of shelves	4.5	5.6	25.5	34.3	30.1	100.0	5.6	3.797	6
Outside dimensions	8.7	10.1	16.8	22.0	42.3	100.0	5.6	3.790	7
Dual temperature controls	12.3	9.4	17.7	21.7	39.0	100.0	8.6	3.657	8
Easy-roll castors	12.9	8.7	19.2	22.0	37.1	100.0	5.6	3.615	9
Low price	10.5	9.5	33.7	17.9	28.4	100.0	5.9	3.442	10
Type of insulation	12.1	14.6	25.7	20.0	27.5	100.0	7.6	3.361	11
Interior wall construction	14.6	12.5	23.8	22.8	26.3	100.0	7.3	3.338	12
Meat keeper	13.8	12.4	28.0	19.1	26.6	100.0	6.9	3.323	13
Brand name	12.8	16.0	28.8	16.7	25.7	100.0	5.0	3.264	14
Operating cost (electricity used)	16.3	16.6	22.3	21.6	23.2	100.0	6.6	3.191	15
Cantilever shelves	23.6	15.4	22.5	18.9	19.6	100.0	7.6	2.957	16
Thin-wall construction	19.3	20.0	24.4	20.0	16.4	100.0	9.2	2.942	17
Butter conditioner	31.7	19.0	23.8	13.1	12.4	100.0	4.3	2.555	18
Ice maker	62.0	11.3	12.0	5.5	9.1	100.0	9.6	1.883	19

TABLE 1.3

FREQUENCY DISTRIBUTIONS FOR MEASURES OF REFRIGERATOR SHOPPING BEHAVIOR

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(1) Number of other brands seriously considered:				
	None	63	20.8	20.9
	One	78	25.7	25.9
	Two or more	160	52.8	53.2
	No data	2	0.7	MISSING
	TOTAL	303	100.0	100.0
(2) Other sizes considered:				
	No others considered	162	53.5	53.8
	Both smaller & larger	44	14.5	14.6
	Smaller	44	14.5	14.6
	Larger	51	16.8	16.9
	No data	2	0.7	MISSING
	TOTAL	303	100.0	100.0
(3) Type of defrost considered:				
	Manual only	15	5.0	5.0
	Frost-free only	235	77.6	78.9
	Both	48	15.8	16.1
	No data	5	1.7	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.3 (cont'd)

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(4) No. of other stores visited:				
	No other stores	63	20.8	20.9
	One other store	55	18.2	18.2
	Two or more others	184	60.7	60.9
	No data	1	0.3	MISSING
	TOTAL	303	100.0	100.0
(5) Purchased other appliances at same store (or chain):				
	Yes	190	62.7	62.9
	No	112	37.0	37.1
	No data	1	0.3	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.4

FREQUENCY DISTRIBUTION FOR IMPACT OF SALESPERSON ON REFRIGERATOR PURCHASE DECISION

OPINION ITEM	Percentage Response Distribution: Strongly Disagree 1	2	3	4	Strongly Agree 5	Total	% No Data	Mean	Rank
Salesperson was very friendly	0.7	0.7	6.0	54.3	38.4	100.0	0.3	4.291	1
Salesperson was readily available when needed	0.0	4.3	11.3	52.0	32.5	100.0	0.3	4.126	2
Salesperson was very knowledgeable about refrigerators	0.7	5.3	22.0	43.7	28.3	100.0	1.0	3.937	3
Salesperson carefully pointed out and explained differences among refrigerators	6.0	13.8	21.8	37.2	21.1	100.0	1.7	3.537	4
Salesperson made many useful suggestions	3.4	13.8	29.9	33.2	19.8	100.0	1.7	3.523	5
Salesperson provided useful printed information for me to take home	14.7	27.7	13.7	31.2	12.7	100.0	3.6	2.993	6
Salesperson's advice was very important in my choice of refrigerators	14.8	23.5	32.9	16.1	12.8	100.0	1.7	2.886	7

TABLE 1.4 (cont'd)

ITEM	RESPONSE MODE (multiple responses possible)	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Features emphasized by salesperson:				
	shelves	41	10.7	18.0
	brand	16	4.2	7.0
	butter conditioner	9	2.3	3.9
	colour	10	2.6	4.4
	dual temperature control	12	3.1	5.3
	castors	19	4.9	8.3
	low price	38	9.9	16.7
	operating costs	8	2.1	3.5
	thin wall construction	4	1.0	1.7
	total capacity	28	7.3	12.3
	type of defrost	25	6.5	11.0
	type of insulation	5	1.3	2.2
	warranty	7	1.8	3.1
	ice maker	2	0.5	0.9
	meat keeper	3	0.8	1.3
	other	1	0.3	0.4
	no data	156	40.6	MISSING
	TOTAL	384	100.0	100.0

TABLE 1.5

FREQUENCY DISTRIBUTION FOR POST REFRIGERATOR PURCHASE MEASURES

REACTION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(1) Satisfaction with new fridge:				
	1. Very satisfied	214	70.5	71.3
	2. Somewhat satisfied	58	19.1	19.3
	3. Neither satisfied nor dissatisfied	17	5.6	5.7
	4. Dissatisfied	6	2.0	2.0
	5. Very dissatisfied	5	1.7	1.7
	6. No data	3	1.0	MISSING
	TOTAL	303	100.0	100.0
	MEAN: 1.433	MODE: 1.000		MEDIAN: 1.201
(2) Satisfaction with store:				
	1. Very satisfied	204	67.3	67.5
	2. Somewhat satisfied	58	19.1	19.2
	3. Neither satisfied nor dissatisfied	18	5.9	6.0
	4. Dissatisfied	18	5.9	6.0
	5. Very dissatisfied	4	1.3	1.3
	6. No data	1	0.3	MISSING
	TOTAL	303	100.0	100.0
	MEAN: 1.543	MODE: 1.000		MEDIAN: 1.240

TABLE 1.5 cont'd

REACTION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(3) Major problems in purchase process:				
	None	205	67.7	68.1
	Information Availability	15	5.0	5.0
	Product Selection	16	5.3	5.3
	Sales Staff	7	2.3	2.3
	Delivery Problems	56	18.5	18.6
	Other	2	0.7	0.7
	No data	2	0.7	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.6

FREQUENCY DISTRIBUTIONS FOR SITUATIONAL FACTORS INVOLVED IN REFRIGERATOR PURCHASE

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(1) Room where refrigerator to be used:				
	Kitchen	233	93.4	93.4
	Rec Room	3	1.0	1.0
	Cottage	3	1.0	1.0
	Rental Suite	9	3.0	3.0
	Office	5	1.7	1.7
	TOTAL	303	100.0	100.0
(2) Refrigerator a replacement?				
	Yes	222	73.3	73.3
	No	81	26.7	26.7
	TOTAL	303	100.0	100.0
(3) Size of old fridge:				
	Smaller	113	37.3	51.4
	Same	65	21.5	29.5
	Larger	42	13.9	19.1
	No data	83	27.4	MISSING
	TOTAL	303	100.0	100.0
(4) Defrost system of old fridge:				
	Manual defrost	126	41.6	57.5
	Automatic	33	10.9	15.1
	Frost-free	60	19.8	27.4
	No data	84	27.7	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.6 cont'd

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(5) Age of old fridge (years):				
	1	2	0.7	1.0
	2	2	0.7	1.0
	3	1	0.3	0.5
	4	7	2.3	3.3
	5	14	4.6	6.7
	6	4	1.3	1.9
	7	4	1.3	1.9
	8	8	2.6	3.8
	10	30	9.9	14.4
	11	3	1.0	1.4
	12	12	4.0	5.7
	13	8	2.6	3.8
	14	6	2.0	2.9
	15	23	7.6	11.0
	16	2	0.7	1.0
	17	6	2.0	2.9
	18	7	2.3	3.3
	19	4	1.3	1.9
	20	18	5.9	8.6
	21	5	1.7	2.4
	22	5	1.7	2.4
	23	3	1.0	1.4
	24	5	1.7	2.4
	25	9	3.0	4.3
	26	2	0.7	1.0
	27	1	0.3	0.5
	28	2	0.7	1.0
	29	1	0.3	0.5
	30	12	4.0	5.7
	40	3	1.0	1.4
	No data	94	31.0	MISSING
	TOTAL	303	100.0	100.0

MEAN:15.321 years MODE:10.000 years MEDIAN:14.652 years

TABLE 1.6 cont'd

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(6) Brand of old fridge:				
	Viking	43	14.2	22.6
	Moffat	5	1.7	2.6
	GE	15	5.0	7.9
	Inglis	4	1.3	2.1
	Sears or Kenmore	4	1.3	2.1
	Fridgidare	17	5.6	8.9
	Philco	7	2.3	3.7
	Gibson	6	2.0	3.2
	Coldspot	14	4.6	7.4
	Admiral	5	1.7	2.6
	Westinghouse	18	5.9	9.5
	Other	52	17.2	27.4
	No data	113	37.3	MISSING
	TOTAL	303	100.0	100.0
(7) What was done with old fridge?				
	Use elsewhere	72	23.8	31.7
	Gave away	42	13.9	18.5
	Broken	21	6.9	9.3
	Trade in or Sold	76	25.1	33.5
	Other	16	5.3	7.0
	No data	76	25.1	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.6 cont'd

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(8) Satisfaction with old fridge?				
	Very satisfied	111	36.6	50.0
	Somewhat satisfied	47	15.5	21.2
	Neither satisfied nor dissatisfied	11	3.6	5.0
	Dissatisfied	36	11.9	16.2
	Very dissatisfied	17	5.6	7.7
	No data	81	26.7	MISSING
	TOTAL	303	100.0	100.0
(9) Major reason for buying a new fridge:				
	Old one broke down	81	26.7	27.2
	Wanted a newer refrigerator with new features	108	35.6	36.2
	Moved to a new residence that had no refrigerator	87	28.7	29.2
	Other	22	7.3	7.4
	No data	5	1.7	MISSING
	TOTAL	303	100.0	100.0
(10) First refrigerator you have ever bought?				
	Yes	65	21.5	22.0
	No	231	76.2	78.0
	No data	7	2.3	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.6 cont'd

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(11) Years new fridge expected to last?				
	5	3	1.0	1.0
	6	1	0.3	0.3
	7	2	0.7	0.7
	8	5	1.7	1.7
	10	90	29.7	30.6
	12	9	3.0	3.1
	13	1	0.3	0.3
	14	1	0.3	0.3
	15	99	32.7	33.7
	18	1	0.3	0.3
	20	69	22.8	23.5
	21	1	0.3	0.3
	25	7	2.3	2.4
	27	1	0.3	0.3
	29	1	0.3	0.3
	30	3	1.0	1.0
	No data	9	3.0	MISSING
	TOTAL	303	100.0	100.0
	MEAN: 14.745	MODE: 15.000		MEDIAN: 14.854

TABLE 1.6 cont'd

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(11) Years since last refrigerator purchase:				
	1	10	3.3	5.1
	2	8	2.6	4.0
	3	9	3.0	4.5
	4	10	3.3	5.1
	5	9	3.0	4.5
	6	6	2.0	3.0
	7	6	2.0	3.0
	8	9	3.0	4.5
	10	27	8.9	13.6
	11	2	0.7	1.0
	12	11	3.6	5.6
	13	9	3.0	4.5
	14	5	1.7	2.5
	15	12	4.0	6.1
	16	2	0.7	1.0
	17	6	2.0	3.0
	18	6	2.0	3.0
	19	3	1.0	1.5
	20	7	2.3	3.5
	21	4	1.3	2.0
	22	6	2.0	3.0
	23	3	1.0	1.5
	24	4	1.3	2.0
	25	6	2.0	3.0
	26	2	0.7	1.0
	27	1	0.3	0.5
	28	1	0.3	0.5
	29	1	0.3	0.5
	30	11	3.6	5.6
	35	1	0.3	0.5
	-62	1	0.3	0.5
	No data	105	34.7	MISSING
	TOTAL	303	100.0	100.0

MEAN: 13.192 MODE: 10.000 MEDIAN: 11.773

TABLE 1.6 cont'd

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(13) Own a freezer?				
	Yes	216	71.3	73.0
	No	80	26.4	27.0
	No data	7	2.3	MISSING
	TOTAL	303	100.0	100.0
	MODE: Yes			
(14) Size of freezer (cubic ft.):	5	1	0.3	0.5
	7	2	0.7	1.0
	8	11	3.6	5.5
	10	4	1.3	2.0
	12	18	5.9	9.0
	13	7	2.3	3.5
	14	5	1.7	2.5
	15	24	7.9	12.0
	16	15	5.0	7.5
	17	11	3.6	5.5
	18	14	4.6	7.0
	19	7	2.3	3.5
	20	16	5.3	8.0
	21	23	7.6	11.5
	22	11	3.6	5.5
	23	11	3.6	5.5
	24	4	1.3	2.0
	25	1	0.3	0.5
	26	3	1.0	1.5
	30	3	1.0	1.5
	32	2	0.7	1.0
	34	1	0.3	0.5
	36	2	0.7	1.0
	38	2	0.7	1.0
	39	1	0.3	0.5
	42	1	0.3	0.5
	No data	103	34.0	MISSING
	TOTAL	303	100.0	100.0

MEAN: 18.050 MODE: 15.000 MEDIAN: 17.643

TABLE 1.7

FREQUENCY DISTRIBUTIONS FOR MEASURES OF GENERAL ENERGY OPINIONS AND KNOWLEDGE

OPINION OR FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(1) Belief in degree of energy shortage in 5 years:	Very serious shortage	5	1.7	1.7
	Serious shortage	84	27.7	27.8
	No real shortage	164	54.1	54.3
	Don't know	49	16.2	16.2
	No data	1	0.3	MISSING
	TOTAL	303	100.0	100.0
(2) Aware of residential electricity rate?	Yes	58	19.1	19.6
	No	238	78.5	80.4
	No data	7	2.3	MISSING
	TOTAL	303	100.0	100.0
(3) Believe that consumers would purchase energy efficient refrigerator if they know which models used less electricity?	Yes	238	78.5	81.0
	No	56	18.5	19.0
	No data	9	3.0	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.7 cont'd

OPINION OR FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(4) Estimation of own residential electricity rate (¢/kwh):				
	1.02	1	0.3	2.1
	1.70	1	0.3	2.1
	2.00	2	0.7	4.2
	2.02	1	0.3	2.1
	2.05	2	0.7	4.2
	2.08	1	0.3	2.1
	2.20	1	0.3	2.1
	2.50	2	0.7	4.2
	3.00	6	2.0	12.8
	3.02	1	0.3	2.1
	3.05	3	1.0	6.4
	3.08	2	0.7	4.2
	3.10	1	0.3	2.1
	3.20	1	0.3	2.1
	3.50	10	3.3	21.3
	3.60	1	0.3	2.1
	4.00	1	0.3	2.1
	4.05	1	0.3	2.1
	4.06	1	0.3	2.1
	4.50	3	1.0	6.4
	5.00	2	0.7	4.2
	5.05	1	0.3	2.1
	5.50	1	0.3	2.1
	6.00	1	0.3	2.1
	No data	256	84.5	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.7 cont'd

OPINION OR FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(5) Estimated difference in yearly operating costs among refrigerators ($):				
	0	15	5.0	6.8
	1	4	1.3	1.8
	2	1	0.3	0.5
	3	1	0.3	0.5
	5	13	4.3	5.9
	8	3	1.0	1.4
	10	43	14.2	19.5
	12	3	1.0	1.4
	15	19	6.3	8.6
	16	1	0.3	0.5
	17	1	0.3	0.5
	18	1	0.3	0.5
	20	33	10.9	15.0
	24	2	0.7	0.9
	25	22	7.3	10.0
	30	10	3.3	4.5
	40	11	3.6	5.0
	50	18	5.9	8.2
	60	6	2.0	2.7
	70	3	1.0	1.4
	72	1	0.3	0.5
	75	3	1.0	1.4
	80	2	0.7	0.9
	99	4	1.3	1.8
	No data	83	27.4	MISSING
	TOTAL	303	100.0	100.0

MEAN: 23.732 MODE: 10.000 MEDIAN: 19.652

TABLE 1.7 cont'd

OPINION OR FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(6) Believed difference in operating costs among refrigerators:				
	1. no difference at all	29	9.6	9.9
	2.	71	23.4	24.3
	3.	115	38.0	39.4
	4.	36	11.9	12.3
	5. Very large difference	41	13.5	14.0
	No data	11	3.6	MISSING
	TOTAL	303	100.0	100.0
	MEAN: 2.962	MODE: 3.000		MEDIAN: 2.900
(7) Should the government require energy consumption labels on all major appliances?				
	Yes	273	90.1	91.6
	No	25	8.3	8.4
	No data	5	1.7	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.7 cont'd

OPINION OR FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(6) Believed difference in operating costs among refrigerators:				
	1. no difference at all	29	9.6	9.9
	2.	71	23.4	24.3
	3.	115	38.0	39.4
	4.	36	11.9	12.3
	5. Very large difference	41	13.5	14.0
	No data	11	3.6	MISSING
	TOTAL	303	100.0	100.0
	MEAN: 2.962	MODE: 3.000		MEDIAN: 2.900
(7) Should the government require energy consumption labels on all major appliances?				
	Yes	273	90.1	91.6
	No	25	8.3	8.4
	No data	5	1.7	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.7 cont'd

OPINION OR FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(8) Price premium willing to pay for refrigerator that costs $25 less per year to operate				
	$			
	0	24	7.9	8.9
	10	4	1.3	1.5
	20	2	0.7	0.7
	25	11	3.6	4.1
	35	1	0.3	0.4
	40	1	0.3	0.4
	50	54	17.8	19.9
	75	17	5.6	6.3
	80	2	0.7	0.7
	100	95	31.4	35.1
	125	7	2.3	2.6
	150	15	5.0	5.5
	200	30	9.9	11.1
	225	1	0.3	0.4
	250	2	0.7	0.7
	300	2	0.7	0.7
	375	1	0.3	0.4
	400	1	0.3	0.4
	500	1	0.3	0.4
	No data	32	10.6	MISSING
	TOTAL	303	100.0	100.0
	MEAN: 95.166	MODE: 100.000		MEDIAN: 98.526

TABLE 1.8

FREQUENCY DISTRIBUTIONS FOR REACTIONS TO ENERGY CONSUMPTION LABELS ON REFRIGERATORS

OPINION OR FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(1) Did you see labels?				
	Yes, I saw labels like Label A (Energy consumption in kwh/ month)	54	17.8	18.1
	Yes, I saw labels like Label B (Energy consumption in $/year)	25	8.3	8.4
	No, I saw no labels	219	72.3	73.5
	No data	5	1.7	MISSING
	TOTAL	303	100.0	100.0
(2) How did the labels come to your attention?				
	Noticed on my own	58	19.1	81.7
	Salesperson pointed them out	13	4.3	18.3
	No data	232	76.6	MISSING
	TOTAL	303	100.0	100.0
(3) Did the salesperson explain the labels to you?				
	Yes	27	8.9	38.0
	No	44	14.5	62.0
	No data	232	76.6	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.8 cont'd

OPINION OR FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(4) Did you feel that the labels were understandable?				
	Yes	58	19.1	84.1
	No	11	3.6	15.9
	No data	234	77.2	MISSING
	TOTAL	303	100.0	100.0
(5) Recalled difference among refrigerators in energy consumption:				
	Large difference	11	3.6	18.3
	Medium difference	34	11.2	56.7
	Small difference	15	5.0	25.0
	No data	243	80.2	MISSING
	TOTAL	303	100.0	100.0
(6) Importance of energy label information in deciding which refrigerator to buy:				
	Not at all important	16	5.3	21.1
	Minor consideration	35	11.6	46.1
	One of a few major considerations	22	7.3	28.9
	Most important consideration	3	1.0	3.9
	No data	227	74.9	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.8 cont'd

OPINION OR FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(7) Label considered to be most useful to consumers:				
	Label A (energy consumption in kwh/mo.)	69	22.8	24.0
	Label B (energy consumption in $/yr.)	191	63.0	66.3
	Both equally satisfactory	15	5.0	5.2
	Neither satis-factory	13	4.3	4.5
	No data	15	5.0	MISSING
	TOTAL	303	100.0	100.0
(8) Do you recall the energy consumption of your new refrigerator?				
	Yes	39	12.9	54.9
	No	32	10.6	45.1
	No data	232	76.6	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.8 cont'd

OPINION OR FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(9) The recalled energy consumption:				
	$16/month	1	0.3	2.6
	$25/month	1	0.3	2.6
	$43/month	5	1.7	12.8
	$44/month	1	0.3	2.6
	$45/month	3	1.0	7.7
	$48/month	1	0.3	2.6
	$50/month	1	0.3	2.6
	$51/month	1	0.3	2.6
	86 kwh/month	2	0.7	5.1
	87 kwh/month	2	0.7	5.1
	123 kwh/month	1	0.3	2.6
	140 kwh/month	1	0.3	2.6
	143 kwh/month	1	0.3	2.6
	144 kwh/month	5	1.7	12.8
	146 kwh/month	1	0.3	2.6
	147 kwh/month	5	1.7	12.8
	148 kwh/month	1	0.3	2.6
	160 kwh/month	1	0.3	2.6
	163 kwh/month	1	0.3	2.6
	177 kwh/month	4	1.3	10.3
	No data	264	87.1	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.9

FREQUENCY DISTRIBUTIONS FOR
REFRIGERATOR PURCHASE CHOICE TRADE-OFFS

TRADE-OFF	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Pair One	A Frost free Operating Cost $55/year Purchase Price $600	209	69.0	73.1
	B Frost Free Operating Cost $40/year Purchase Price $800	77	25.4	26.9
	No data	17	5.6	MISSING
	TOTAL	303	100.0	100.0
Pair Two	A Frost free Operating Cost $70/year Purchase Price $600	76	25.1	26.9
	B Frost Free Operating Cost $40/year Purchase Price $800	207	68.3	73.1
	No data	20	6.6	MISSING
	TOTAL	303	100.0	100.0
Pair Three	A Frost free Operating cost $70/year Purchase Price $600	190	62.7	68.1
	B Frost free Operating Cost $55/year Purchase Price $800	89	29.4	31.9
	No data	24	7.9	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.9 cont'd

TRADE-OFF	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Pair Four	A Manual Defrost			
	Operating Cost $25/year			
	Purchase Price $400	47	15.5	16.5
	B Frost Free			
	Operating Cost $40/year			
	Purchase Price $400	237	78.2	83.5
	No data	19	6.3	MISSING
	TOTAL	303	100.0	100.0
Pair Five	A Manual Defrost			
	Operating Cost $25/year			
	Purchase Price $400	80	26.4	28.3
	B Frost Free			
	Operating Cost $55/year			
	Purchase Price $400	203	67.0	71.7
	No data	20	6.6	MISSING
	TOTAL	303	100.0	100.0
Pair Six	A Manual Defrost			
	Operating cost $25/year			
	Purchase Price $400	136	44.9	48.1
	B Frost free			
	Operating Cost $70/year			
	Purchase Price $400	147	48.5	51.9
	No data	20	6.6	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.9 cont'd

TRADE-OFF	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Pair Seven	A Manual Defrost			
	Operating Cost $25/year			
	Purchase Price $400	60	19.8	21.2
	B Frost Free			
	Operating Cost $25/year			
	Purchase Price $600	223	73.6	78.8
	No data	20	6.6	MISSING
	TOTAL	303	100.0	100.0
Pair Eight	A Manual Defrost			
	Operating Cost $25/year			
	Purchase Price $400	100	33.0	35.3
	B Frost Free			
	Operating Cost $40/year			
	Purchase Price $600	183	60.4	64.7
	No data	20	6.6	MISSING
	TOTAL	303	100.0	100.0
Pair Nine	A Manual Defrost			
	Operating cost $25/year			
	Purchase Price $400	130	42.9	46.1
	B Frost free			
	Operating Cost $55/year			
	Purchase Price $600	152	50.2	53.9
	No data	21	6.9	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.9 cont'd

TRADE-OFF	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Pair Ten	A Manual Defrost			
	Operating Cost $25/year			
	Purchase Price $400	155	51.2	55.0
	B Frost Free			
	Operating Cost $70/year			
	Purchase Price $600	127	41.9	45.0
	No data	21	6.9	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.10

FREQUENCY DISTRIBUTIONS FOR INDIVIDUAL CHARACTERISTICS OF REFRIGERATOR BUYERS (RESPONDENTS)

CHARACTERISTIC	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Age:				
	Under 25 years	14	4.6	4.7
	25 - 34 years	62	20.5	20.7
	35 - 44 years	63	20.8	21.1
	45 - 54 years	63	20.8	21.1
	55 years or over	97	32.0	32.4
	No data	4	1.3	MISSING
	TOTAL	303	100.0	100.0
Number of people in household:				
	1	15	5.0	5.2
	2	119	39.3	41.5
	3	45	14.9	15.7
	4	63	20.8	22.0
	5	32	10.6	11.1
	6	10	3.3	3.5
	7	2	0.7	0.7
	8	1	0.3	0.3
	No data	16	5.3	MISSING
	TOTAL	303	100.0	100.0
Marital status:				
	Married	251	82.8	83.7
	Widowed	21	6.9	7.0
	Divorced or Separated	8	2.6	2.7
	Common-Law	11	3.6	3.7
	Single	9	3.0	3.0
	No data	3	1.0	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.10 cont'd

CHARACTERISTIC	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Sex:				
	Male	138	45.5	46.2
	Female	161	53.1	53.8
	No data	4	1.3	MISSING
	TOTAL	303	100.0	100.0
Level of Education of respondent:				
	Post graduate	38	12.5	12.8
	None or some public	16	5.3	5.4
	Completed public	28	9.2	9.5
	Some secondary	28	9.2	9.5
	Secondary grad	62	20.5	20.9
	Some technical	21	6.9	7.1
	Technical grad	28	9.2	9.5
	Some university	33	10.9	11.1
	University grad	42	13.9	14.2
	No data	7	2.3	MISSING
	TOTAL	303	100.0	100.0
Employment status of respondent:	Full time	171	56.4	57.6
	Part time	43	14.2	14.5
	Doesn't work	83	27.4	27.9
	No data	6	2.0	MISSING
	TOTAL	303	100.0	100.0
Employment status of spouse:	Full time	140	46.2	50.5
	Part time	34	11.2	12.3
	Doesn't work	77	25.4	27.8
	No spouse	26	8.6	9.4
	No data	26	8.6	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.10 cont'd

CHARACTERISTIC	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Family income:				
	$ 3000 - $4999	7	2.3	2.5
	$ 5000 - $7499	9	3.0	3.2
	$ 7500 - $9999	12	4.0	4.3
	$10000 -$12499	20	6.6	7.1
	$12500 -$14999	14	4.6	5.0
	$15000 -$17499	26	8.6	9.2
	$17500 -$19999	27	8.9	9.6
	$20000 -$24999	55	18.2	19.5
	$25000 -$29999	33	10.9	11.7
	$30000 -$34999	26	8.6	9.2
	over $35000	53	17.5	18.8
	No data	21	6.9	MISSING
	TOTAL	303	100.0	100.0
Occupation of respondent:				
	Student	3	1.0	1.0
	Unemployed	5	1.7	1.7
	Retired	32	10.6	10.7
	Homemaker	52	17.2	17.4
	Farmer	4	1.3	1.3
	Unskilled labour	8	2.6	2.7
	Skilled labour	51	16.8	17.1
	Clerical worker	28	9.2	9.4
	Salesperson	17	5.6	5.7
	Business Executive	36	11.9	12.1
	Professional	62	20.5	20.8
	No data	5	1.7	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.10 cont'd

CHARACTERISTIC	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Occupation of spouse:				
	Student	1	0.3	0.4
	Unemployed	6	2.0	2.3
	Retired	17	5.6	6.5
	Homemaker	60	19.8	22.8
	Farmer	3	1.0	1.1
	Unskilled labour	6	2.0	2.3
	Skilled labour	51	16.8	19.4
	Clerical worker	30	9.9	11.4
	Salesperson	19	6.3	7.2
	Business Executive	21	6.9	8.0
	Professional	49	16.2	18.6
	No data	40	13.2	MISSING
	TOTAL	303	100.0	100.0
Type of dwelling occupied:				
	House	274	90.4	91.0
	Apartment	6	2.0	2.0
	Duplex	13	4.3	4.3
	Townhouse	2	0.7	0.7
	Condominium	2	0.7	0.7
	Condominium Apartment	2	0.7	0.7
	Mobile Home	2	0.7	0.7
	No data	2	0.7	MISSING
	TOTAL	303	100.0	100.0

TABLE 1.10 cont'd

CHARACTERISTIC	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Length of time in current home:				
	More than 20 years	43	14.2	14.3
	Less than 1 year	108	35.6	35.9
	One year	4	1.3	1.3
	Two years	11	3.6	3.7
	Three years	10	3.3	3.3
	4-5 years	27	8.9	9.0
	6-7 years	10	3.3	3.3
	8-10 years	20	6.6	6.6
	11-20 years	68	22.4	22.6
	No data	2	0.7	MISSING
	TOTAL	303	100.0	100.0

SALESPERSON SURVEY FREQUENCIES

TABLE 2.1

FREQUENCY DISTRIBUTIONS FOR SALESPEOPLE'S EXPERIENCE WITH REFRIGERATOR ENERGY LABELS

OPINION	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(1) Did customers look at Energuide labels?				
	Yes	25	59.5	86.2
	No	4	9.5	13.8
	No data	13	31.0	MISSING
	TOTAL	42	100.0	100.0
(2) What percent of customers looked at Energuide labels?	%			
	0	4	9.5	14.3
	1	1	2.4	3.6
	4	1	2.4	3.6
	5	2	4.8	7.1
	10	7	16.7	25.0
	15	1	2.4	3.6
	20	1	2.4	3.6
	25	4	9.5	14.3
	30	1	2.4	3.6
	40	3	7.1	10.7
	50	2	4.8	7.1
	60	1	2.4	3.6
	No data	14	33.3	MISSING
	TOTAL	42	100.0	100.0

MEAN: 18.929% MODE: 10.000% MEDIAN: 10.357%

TABLE 2.1 cont'd

FREQUENCY DISTRIBUTIONS FOR SALESPEOPLE'S EXPERIENCE WITH REFRIGERATOR ENERGY LABELS

OPINION	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(3) Did any customers consider energy consumption to be a key factor?	Yes	10	23.8	34.5
	No	19	45.2	65.5
	No data	13	31.0	MISSING
	TOTAL	42	100.0	100.0
(4) Percentage of customers who seemed to consider energy consumption as one of the key factors in their decision				
	%			
	0	18	42.9	64.3
	1	1	2.4	3.6
	2	1	2.4	3.6
	5	1	2.4	3.6
	10	4	9.5	14.3
	15	2	4.8	7.1
	50	1	2.4	3.6
	No data	14	33.3	MISSING
	TOTAL	42	100.0	100.0
	MEAN: 4.511	MODE: 0.0	MEDIAN: 0.278	

TABLE 2.1 cont'd

OPINION	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(5) Difficulties in explaining the Energuide labels:				
	No problem	22	52.5	91.7
	Concerned customer would purchase cheaper fridge	1	2.4	4.2
	People do not understand CSA standards	1	2.4	4.2
	No data	18	42.9	MISSING
	TOTAL	42	100.0	100.0
(6) Other salesperson comments re. Energuide labels:				
	None	9	21.4	37.5
	Customers don't care	4	9.5	16.7
	Good idea	5	11.9	20.8
	Not necessary	1	2.4	4.2
	Selling job easier for energy conscious	2	4.8	8.3
	Label should be in dollars	2	4.8	8.3
	Energy consumption depends on size of family	1	2.4	4.2
	No data	18	42.9	MISSING
	TOTAL	42	100.0	100.0

TABLE 2.2

FREQUENCY DISTRIBUTION FOR SALESPEOPLE'S OPINIONS ON THE IMPORTANCE OF REFRIGERATOR FEATURES TO CONSUMERS

	Percentage Response Distribution								
	Not at all important				Extremely important		% No		
FEATURE	1	2	3	4	5	Total	Data	Mean	Rank
Type of defrost	0.0	0.0	2.4	21.4	76.2	100.0	0.0	4.738	1
Warranty	0.0	0.0	7.5	17.5	75.0	100.0	4.8	4.675	2
Colour	0.0	2.4	4.8	26.2	66.7	100.0	0.0	4.571	3
Easy-roll castors	0.0	2.4	7.1	31.0	59.5	100.0	0.0	4.476	4
Outside dimensions	0.0	0.0	11.9	45.2	42.9	100.0	0.0	4.310	5
Dual temperature controls	0.0	2.4	23.8	21.4	52.4	100.0	0.0	4.238	6
Total storage capacity	0.0	5.0	10.0	45.0	40.0	100.0	0.0	4.200	7
Number and arrangement of shelves	2.4	7.1	28.6	50.0	11.9	100.0	0.0	3.619	8
Brand name	4.9	7.3	31.7	39.0	17.1	100.0	2.4	3.561	9
Thin-wall construction	2.4	14.3	31.0	40.5	11.9	100.0	0.0	3.452	10
Type of insulation	4.8	11.9	38.1	33.3	11.9	100.0	0.0	3.357	11
Cantilever shelves	0.0	7.1	57.1	28.6	7.1	100.0	0.0	3.357	
Meat keeper	2.4	22.0	29.3	31.7	14.6	100.0	0.0	3.341	13
Low price	0.0	19.5	48.8	17.1	14.6	100.0	0.0	3.268	14
Butter conditioner	4.8	21.4	42.9	19.0	11.9	100.0	0.0	3.119	15
Interior wall construction	16.7	11.9	35.7	19.0	16.7	100.0	0.0	3.071	16
Operating cost (electricity used)	23.8	38.1	23.8	14.3	0.0	100.0	0.0	2.286	17
Ice maker	76.2	16.7	4.8	0.0	2.4	100.0	0.0	1.357	18

TABLE 2.2 cont'd

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(2) Feature emphasized when customer asks about a manual defrost refrigerator: (multiple responses possible)				
	None	7	8.6	8.6
	Saves energy	21	25.9	25.9
	Uses extra labour	6	7.4	7.4
	Shelves	5	6.2	6.2
	Warranty	5	6.2	6.2
	Price	7	8.6	8.6
	Size	9	11.1	11.1
	Noise level	4	4.9	4.9
	Other	17	21.0	21.0
	Total Responses	81	100.0	100.0
(3) Feature emphasized when customer asks about a frost free refrigerator: (multiple responses possible)				
	Convenience	33	45.2	47.8
	Better freezer	14	19.2	20.3
	Shelves	5	6.8	7.3
	More features	8	11.0	11.6
	Nothing	9	12.3	13.0
	No data	4	5.5	MISSING
	Total Responses	73	100.0	100.0

TABLE 2.2 cont'd

FACTOR	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(4) Difficulty of shifting customer interest from manual defrost to frost free:				
	1. Very difficult	4	9.5	9.5
	2. Somewhat difficult	8	19.0	19.0
	3. So-so	11	26.2	26.2
	4. Somewhat easy	14	33.3	33.3
	5. Very easy	5	11.9	11.9
	Total	42	100.0	100.0
	MEAN: 3.190	MODE: 4.000	MEDIAN: 3.318	
(5) Difficulty of shifting customer interest from frost free to manual defrost:				
	1. Very difficult	24	57.1	58.5
	2. Somewhat difficult	14	33.3	34.1
	3. So-so	1	2.4	2.4
	4. Somewhat easy	2	4.8	4.9
	No data	1	2.4	MISSING
	Total	42	100.0	100.0
	MEAN: 1.537	MODE: 1.000	MEDIAN: 1.354	

TABLE 2.3

FREQUENCY DISTRIBUTIONS FOR ENERGY CONSUMPTION INFORMATION PROVIDED TO CUSTOMERS

ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(1) Percentage of customers asking about energy consumption:				
	0%	2	4.8	5.1
	1-5%	17	40.5	43.6
	6-10%	11	26.2	28.2
	11-20%	6	14.3	15.4
	21-30%	3	7.1	7.7
	No data	3	7.1	MISSING
	Total	42	100.0	100.0
(2) Percentage of customers that salesperson talks to about energy consumption:				
	0%	14	33.3	33.3
	1-5%	11	26.2	26.2
	6-10%	5	11.9	11.9
	11-20%	2	4.8	4.8
	21-30%	6	14.3	14.3
	31-50%	2	4.8	4.8
	75-100%	2	4.8	4.8
	Total	42	100.0	100.0

TABLE 2.3 cont'd

ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(3) Information (sales points) given to customer asking about operating costs:				
	Uses little electricity	5	11.9	14.3
	Customer needs	3	7.1	8.6
	Frost free better	8	19.0	22.9
	Make comparisons	11	26.2	31.4
	Volunteer little as possible	2	4.8	5.7
	Depends on rate	1	2.4	2.9
	Check with hydro	1	2.4	2.9
	Fact sheet	3	7.1	8.6
	Other	1	2.4	2.9
	No data	7	16.7	MISSING
	Total	42	100.0	100.0

TABLE 2.3 cont'd

ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(4) Salesperson's estimate of difference in annual operating costs between a manual and frost free refrigerator (both 13 cu. ft.):	$ per year manual is cheaper			
	5	1	2.4	2.6
	10	3	7.1	7.7
	12	2	4.8	5.1
	15	1	2.4	2.6
	17	3	7.1	7.7
	18	2	4.8	5.1
	20	8	19.0	20.5
	22	1	2.4	2.6
	23	6	14.3	15.4
	24	3	7.1	7.7
	25	2	4.8	5.1
	27	1	2.4	2.6
	28	1	2.4	2.6
	30	1	2.4	2.6
	32	1	2.4	2.6
	35	1	2.4	2.6
	36	1	2.4	2.6
	40	1	2.4	2.6
	No data	3	7.1	MISSING
		42	100.0	100.0
	MEAN: $21.308	MODE: $20.000	MEDIAN: $20.438	

TABLE 2.3 cont'd

ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(5) Salespersons' estimate of range of annual operating costs for frost free refrigerators (difference between cheapest and most expensive to operate):				
	$/yr.			
	0, i.e. none	1	2.4	2.8
	2	1	2.4	2.8
	5	1	2.4	2.8
	6	1	2.4	2.8
	8	1	2.4	2.8
	10	13	31.0	36.1
	11	1	2.4	2.8
	12	3	7.1	8.3
	15	4	9.5	11.1
	20	4	9.5	11.1
	27	1	2.4	2.8
	30	2	4.8	5.6
	35	1	2.4	2.8
	40	1	2.4	2.8
	50	1	2.4	2.8
	No data	6	14.3	MISSING
	Total	42	100.0	100.0
	MEAN: $15.28	MODE: $10.00	MEDIAN: $10.50	

TABLE 2.4

FREQUENCY DISTRIBUTION FOR SALESPERSON'S OPINIONS ABOUT THE ENERGY SITUATION

OPINION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(1) How serious is the energy shortage?				
	Very serious	1	2.4	2.4
	Quite serious	6	14.3	14.6
	No real shortage	31	73.8	75.6
	Don't know	3	7.1	7.3
	No data	1	2.4	MISSING
	TOTAL	42	100.0	100.0
(2) Is the energy consumed by home appliances significant?				
	Yes	25	59.5	59.5
	No	17	40.5	40.5
	TOTAL	42	100.0	100.0
(3) Are you aware of the residential electricity rate?				
	Yes	19	45.2	52.8
	No	17	40.5	47.2
	No data	6	14.3	MISSING
	TOTAL	42	100.0	100.0

TABLE 2.4 cont'd

OPINION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(4) Estimated rate:	¢/kwh			
	2.00	1	2.4	5.6
	2.20	1	2.4	5.6
	2.40	1	2.4	5.6
	2.50	8	19.0	44.4
	2.80	1	2.4	5.6
	3.00	3	7.1	16.7
	3.50	2	4.8	11.1
	6.00	1	2.4	5.6
	No data	24	57.1	MISSING
	TOTAL	42	100.0	100.0
(5) Would consumers buy energy efficient refrigerators if they knew which models used less electricity?				
	Yes	19	45.2	47.5
	No	21	50.0	52.5
	No data	2	4.8	MISSING
	TOTAL	42	100.0	100.0
(6) Purchase price premium that salespeople feel consumers would pay for a refrigerator that is more energy efficient (i.e., one that costs $25/yr. less to operate than a comparable model):				
	$ 0	6	14.3	16.7
	25	3	7.1	8.3
	35	1	2.4	2.8
	50	10	23.8	27.8
	75	4	9.5	11.1
	100	9	21.4	25.0
	150	2	4.8	5.6
	200	1	2.4	2.8
	No data	6	14.3	MISSING
	TOTAL	42	100.0	100.0
	MEAN: $64.17	MODE: $50.00		MEDIAN: $53.00

TABLE 2.5

FREQUENCY DISTRIBUTION FOR SALESPERSON'S OPINIONS ON ENERGY CONSUMPTION LABELS

ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(1) Aware of government labelling program?				
	Yes	40	95.2	95.2
	No	2	4.8	4.8
	Total	42	100.0	100.0
(2) Which (Energuide) label is more useful?				
	Label A (kwh/mon)	17	40.5	40.5
	Label B ($/yr.)	22	52.4	52.4
	Both satisfactory	2	4.8	4.8
	Neither satisfactory	1	2.4	2.4
	Total	42	100.0	100.0
(3) Recommended location of energy label:				
	Near serial number plate	4	9.5	9.5
	Outside of the door at eye level	10	23.8	23.8
	Inside wall of refrigerator	26	61.9	61.9
	Price tag	2	4.8	4.8
	Total	42	100.0	100.0

TABLE 2.5 cont'd

ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(4) In favor of Energuide label requirement for all refrigerators?				
	Yes	32	76.2	78.0
	No	9	21.4	22.0
	No data	1	2.4	MISSING
	Total	42	100.0	100.0
(5) Reasons for or against labels:				
	Customer information	12	28.6	48.0
	Better manufacturing	4	9.5	16.0
	Waste of money	5	11.9	20.0
	Customer might not buy a new one as readily	1	2.4	4.0
	Labels have nothing to do with decision	2	4.8	8.0
	Good selling feature	1	2.4	4.0
	No data	17	40.5	MISSING
	Total	42	100.0	100.0
(6) Should energy labels be required on all major appliances?				
	Yes	28	66.7	66.7
	No	14	33.3	33.3
	Total	42	100.0	100.0

TABLE 2.5 cont'd

ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
(7) Would the program reduce energy consumption?				
	Yes	27	64.3	65.9
	No	14	33.3	34.1
	No data	1	2.4	MISSING
	Total	42	100.0	100.0
(8) Why energy consumption would be reduced:				
	Better manufacturing	7	16.7	30.4
	Every little bit helps	2	4.8	8.7
	Consumers might switch	4	9.5	17.4
	People don't care	7	16.7	30.4
	People will buy more	2	4.8	8.7
	Other	1	2.4	4.3
	No data	19	45.2	MISSING
	Total	42	100.0	100.0
(9) Would you display a booklet on energy consumption of refrigerator?				
	Yes	36	85.7	85.7
	No	6	14.3	14.3
	Total	42	100.0	100.0

TABLE 2.6

FREQUENCY DISTRIBUTION FOR SALESPERSON'S REACTIONS TO THE "FACT SHEET"

OPINION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Is there anything about the "fact sheet" that is confusing?				
	Yes	1	2.4	2.6
	No	38	90.5	97.4
	No data	3	7.1	MISSING
	Total	42	100.0	100.0
Does "fact sheet" information seem believable and accurate to you?				
	Yes	38	90.5	97.4
	No	1	2.4	2.6
	No data	3	7.1	MISSING
	Total	42	100.0	100.0
Would you use this information in your sales presentation?				
	Yes	27	64.3	65.9
	No	14	33.3	34.1
	No data	1	2.4	MISSING
	Total	42	100.0	100.0
How would you use it? What would you emphasize?				
	Money saved	4	9.5	18.2
	Tool to close sale	15	35.7	68.2
	Lower operating costs of certain makes	3	7.1	13.6
	No data	20	47.6	MISSING
	Total	42	100.0	100.0

TABLE 2.6 cont'd

OPINION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Reason for not using "fact sheet" in sales presentation:				
	Saving not important	3	7.1	33.3
	Confusing	1	2.4	11.1
	Lead to loss of sale	4	9.5	44.4
	Smaller sale less commission	1	2.4	11.1
	No data	33	78.6	MISSING
	Total	42	100.0	100.0

TABLE 2.7

FREQUENCY DISTRIBUTION FOR
SALESPERSON CHARACTERISTICS

CHARACTERISTIC	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Full or part-time salesperson:				
	Full-time	40	95.2	97.6
	Part-time	1	2.4	2.4
	No data	1	2.4	MISSING
	Total	42	100.0	100.0
Product sold:				
	Refrigerators	42	100.0	
	Freezers	42	100.0	
	Ranges	42	100.0	
	Dishwashers	42	100.0	
	Washers	42	100.0	
	Dryers	42	100.0	
	Air conditioners	30	71.4	
	Furniture	9	21.4	
	Stereo equipment	20	47.6	
	T.V.	19	45.2	
	Small appliances	10	23.8	
	Others	27	64.3	
Sex of respondent salesperson:				
	Female	4	9.5	9.5
	Male	38	90.5	90.5
	Total	42	100.0	100.0

TABLE 2.7 cont'd

CHARACTERISTIC	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Years experience as a salesperson:				
	2	1	2.4	2.5
	3	1	2.4	2.5
	4	1	2.4	2.5
	5	2	4.8	5.0
	6	1	2.4	2.5
	7	1	2.4	2.5
	8	1	2.4	2.5
	10	1	2.4	2.5
	12	1	2.4	2.5
	16	2	4.8	5.0
	17	1	2.4	2.5
	20	5	11.9	12.5
	23	1	2.4	2.5
	25	2	4.8	5.0
	26	2	4.8	5.0
	27	2	4.8	5.0
	28	3	7.1	7.5
	30	2	4.8	5.0
	32	1	2.4	2.5
	34	1	2.4	2.5
	35	3	7.1	7.5
	38	2	4.8	5.0
	40	1	2.4	2.5
	42	1	2.4	2.5
	45	1	2.4	2.5
	No data	2	4.8	MISSING
	Total	42	100.0	100.0

MEAN: 22.700 MODE: 20.000 MEDIAN: 25.000

TABLE 2.7 cont'd

CHARACTERISTIC	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Years experience selling major appliances:				
	1	1	2.4	2.4
	2	5	11.9	11.9
	3	1	2.4	2.4
	5	1	2.4	2.4
	6	5	11.9	11.9
	7	2	4.8	4.8
	8	3	7.1	7.1
	10	2	4.8	4.8
	12	1	2.4	2.4
	15	1	2.4	2.4
	16	2	4.8	4.8
	17	3	7.1	7.1
	18	2	4.8	4.8
	20	1	2.4	2.4
	25	1	2.4	2.4
	26	1	2.4	2.4
	28	4	9.5	9.5
	30	1	2.4	2.4
	31	1	2.4	2.4
	34	1	2.4	2.4
	35	2	4.8	4.8
	36	1	2.4	2.4
	Total	42	100.0	100.0

MEAN: 15.167 MODE: 2.000 MEDIAN: 12.500

TABLE 2.7 cont'd

CHARACTERISTIC	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Number of refrigerators sold per year:				
	15	2	4.8	5.7
	20	1	2.4	2.9
	30	1	2.4	2.9
	45	1	2.4	2.9
	48	1	2.4	2.9
	50	4	9.5	11.4
	52	1	2.4	2.9
	60	3	7.1	8.6
	70	1	2.4	2.9
	72	1	2.4	2.9
	75	1	2.4	2.9
	100	5	11.9	14.3
	110	1	2.4	2.9
	145	1	2.4	2.9
	150	3	7.1	8.6
	175	1	2.4	2.9
	200	6	14.3	17.1
	250	1	2.4	2.9
	No data	7	16.7	MISSING
	Total	42	100.0	100.0
	MEAN: 104.343	MODE: 200.000	MEDIAN: 99.200	
Have you had any formal sales training?				
	Yes	17	40.5	43.6
	No	22	52.4	56.4
	No data	3	7.1	MISSING
	Total	42	100.0	100.0

TABLE 2.7 cont'd

CHARACTERISTIC	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Yearly income from selling:				
	under $12,499	2	4.8	5.4
	$12,500-$14,999	11	26.2	29.7
	$15,000-$17,499	7	16.7	18.9
	$17,500-$19,999	11	26.2	29.7
	$20,000-$24,999	3	7.1	8.1
	$25,000-$29,999	3	7.1	8.1
	No data	5	11.9	MISSING
	Total	42	100.0	100.0
Age of respondent salesperson:				
	25-34 years	6	14.3	14.3
	35-44 years	4	9.5	9.5
	45-54 years	13	31.0	31.0
	over 55	19	45.2	45.2
	Total	42	100.0	100.0
Education level of respondent salesperson:				
	Some public school	1	2.4	2.4
	Completed public school	9	21.4	21.4
	Some secondary school	4	9.5	9.5
	Graduated secondary school	16	38.1	38.1
	Some technical school	5	11.9	11.9
	Graduated technical school	2	4.8	4.8
	Some university	5	11.9	11.9
	Total	42	100.0	100.0

TEST SHOPPING FREQUENCIES

TABLE 3.1

FREQUENCY DISTRIBUTIONS FOR INFORMATION PROVIDED VOLUNTARILY BY SALESPERSONS

	ABSOLUTE FREQUENCY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Average size of models shown:				
cubic feet				
14		2	2.6	2.7
15		19	24.4	25.3
16		52	66.7	69.3
17		2	2.6	2.7
No data		3	3.8	MISSING
	Total	78	100.0	100.0

MEAN: 15.907 MODE: 16.000 MEDIAN: 15.826

PRODUCT FEATURES DISCUSSED BY SALESPERSON: FEATURE	Percentage Frequency of Mention of Product Feature (N=78)	Rank
Size	92.3%	1
Price	89.7%	2
Type of shelves	83.3%	3
Colour	78.2%	4
Brand	75.6%	5
Butter keeper	66.7%	6
Special food containers	64.1%	7
Construction material	56.4%	8
Operating cost or energy consumption	46.2%	9
Ice maker	44.9%	10-11
Warranty	44.9%	10-11
Overall dimensions	43.6%	12
Insulation	34.6%	13
Manual vs. frost free defrost	26.9%	14
Castors	21.8%	15
Wall thickness	10.3%	16

TABLE 3.1 cont'd

QUESTION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Did salesperson ask if you would consider manual defrost?				
	Yes	8	10.3	10.3
	No	70	89.7	89.7
	Total	78	100.0	100.0
Did salesperson volunteer information on energy consumption?				
	Yes	8	10.3	10.3
	No	70	89.7	89.7
	Total	78	100.0	100.0
Did salesperson make model comparisons regarding energy consumption?				
	Yes	25	32.1	32.1
	No	53	67.9	67.9
	Total	78	100.0	100.0
What comparison information did he give you?				
	$ operating costs	7	9.0	28.0
	all the same	1	1.3	4.0
	comparison of size	8	10.3	32.0
	retailers's own brand superior	7	9.0	28.0
	referred to fact sheet	2	2.6	8.0
	no data	53	67.9	MISSING
	Total	78	100.0	100.0

TABLE 3.1 cont'd

QUESTION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Was the Energuide label present on the models you looked at?				
	Yes	61	78.2	78.2
	No	7	9.0	9.0
	Missing on some units	10	12.8	12.8
	Total	78	100.0	100.0
Did the salesperson draw your attention to the label?				
	Yes	7	9.0	9.1
	No	70	89.7	90.9
	No data	1	1.3	MISSING
	Total	78	100.0	100.0
Did the salesperson interpet the label?				
	Yes	36	46.2	46.8
	No	41	52.6	53.2
	No data	1	1.3	MISSING
	Total	78	100.0	100.0
Did the salesperson interpet the label correctly?				
	Yes	28	35.9	75.7
	No	9	11.5	24.3
	No data	41	52.6	MISSING
	Total	78	100.0	100.0

TABLE 3.1 cont'd

QUESTION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Did the salesperson voluntarily provide printed energy consumption information?				
	Yes	11	14.1	14.1
	No	67	85.9	85.9
	Total	78	100.0	100.0

TABLE 3.2

FREQUENCY DISTRIBUTIONS FOR SALESPEOPLE'S RESPONSES TO SPECIFIC TEST SHOPPER QUESTIONS

INFORMATION	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Salesperson's response about the efficiency of operation:				
	Size wise all models are the same	17	21.8	22.1
	The dollar cost per year emphasized	4	5.1	5.2
	Referred to a specific brand as being most efficient	11	14.1	14.3
	Under warranty	6	7.7	7.8
	Very efficient: only pennies to operate	2	2.6	2.6
	Depends on door opening	8	10.3	10.4
	Great difference among models and sizes	14	17.9	18.2
	No difference	14	17.9	18.2
	Referred to fact sheet	1	1.3	1.3
	No data	1	1.3	MISSING
	Total	78	100.0	100.0
Salesperson's interpretation of Energuide label:				
	Measurement of electricity used	19	24.4	26.4
	Utter rot	10	12.8	13.9
	Dollar cost to operate	13	16.7	18.1
	Government/CSA Program	27	34.6	37.5
	An experiment	2	2.6	2.8
	For the consumer's interest	1	1.3	1.4
	No data	6	7.7	MISSING
	Total	78	100.0	100.0

TABLE 3.2 cont'd

INFORMATION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
Did the salesperson provide printed information on energy consumption?				
	Yes	17	21.8	21.8
	No	61	78.2	78.2
	Total	78	100.0	100.0
Did the salesperson clearly explain energy consumption?				
	Yes	33	42.3	42.9
	No	44	56.4	57.1
	No data	1	1.3	MISSING
	Total	78	100.0	100.0
How informed was the salesperson?				
	1. Very uninformed	8	10.3	10.4
	2.	3	3.8	4.0
	3.	9	11.5	11.7
	4.	6	7.7	7.8
	5.	9	11.5	11.7
	6.	11	14.1	14.3
	7.	8	10.3	10.4
	8.	11	14.1	14.3
	9.	9	11.5	11.7
	10. Very informed	3	3.8	4.0
	No data	1	1.3	MISSING
	Total	78	100.0	100.0

TABLE 3.2 cont'd

INFORMATION ITEM	RESPONSE MODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)
How friendly was the salesperson?				
	1. Very unfriendly	2	2.6	2.6
	2.	1	1.3	1.3
	3.	2	2.6	2.6
	4.	2	2.6	2.6
	5.	9	11.5	11.5
	6.	7	9.0	9.0
	7.	14	17.9	17.9
	8.	21	26.9	26.9
	9.	6	7.7	7.7
	10. Very friendly	14	17.9	17.9
	Total	78	100.0	100.0
What brand and features did the salesperson push?				
	Sale item	21	26.9	26.9
	Styling features	8	10.3	10.3
	Retailer's own brand	29	37.2	37.2
	Other brands	10	12.8	12.8
	None	10	12.8	12.8
	Total	78	100.0	100.0

SAMPLE REPRESENTATIVENESS TABLES

TABLE 4.1

COMPARISON OF RESPONDENT REFRIGERATOR BUYERS
WITH ALL TEST PERIOD BUYERS

MEASURE	RESPONDENTS		TEST PERIOD POPULATION	
	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)
STORE:				
Thunder Bay	9	3.0	19	2.6
Winnipeg Downtown	43	14.2	91	12.6
Winnipeg Polo Park	10	3.3	16	2.2
Winnipeg Garden City	3	1.0	8	1.1
Regina	25	8.3	36	5.0
Saskatoon	25	8.3	53	7.4
Edmonton 137th	9	3.0	15	2.1
Edmonton 101st	10	3.3	91	12.6
Medicine Hat	5	1.7	7	1.0
Lethbridge	6	2.0	17	2.4
Brentwood	16	5.3	32	4.4
Lansdowne	19	6.3	29	4.0
Pacific Centre	32	10.6	96	13.3
Park Royal	19	6.3	36	5.0
Guildford	15	5.0	38	5.3
Seven Oaks	2	0.7	17	2.4
Victoria	44	14.5	92	12.8
Calgary Downtown	11	3.6	27	3.7
Total	303	100.0	720	100.0
TYPE:				
Control	75	24.8	167	23.2
KWH no push	76	25.1	161	22.4
KWH push	57	18.8	126	17.5
$ no push	39	12.9	143	19.9
$ push	56	18.5	123	17.1
Total	303	100.0	720	100.0

TABLE 4.1 cont'd

MEASURE	RESPONDENTS		TEST PERIOD POPULATION	
	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)
SIZE (cubic feet)				
3	1	0.3	6	0.8
5	6	2.0	17	2.4
8	1	0.3	0	0.0
10	12	4.0	32	4.4
11	3	1.0	9	1.2
12	25	8.3	62	8.6
13	31	10.2	77	10.7
14	1	0.3	1	0.1
15	49	16.2	121	16.8
16	113	37.3	245	34.0
17	36	11.9	86	11.9
18	14	4.6	36	5.0
19	4	1.3	11	1.5
20	2	0.7	3	0.4
21	1	0.3	1	0.1
22	1	0.3	2	0.3
24	2	0.7	7	1.0
25	1	0.3	2	0.3
No data	0	0.0	2	0.3
Total	303	100.0	720	100.0
	MEAN: 14.872		MEAN: 15.017	

TABLE 4.1 cont'd

MEASURE	RESPONDENTS ABSOLUTE FREQUENCY	RESPONDENTS RELATIVE FREQUENCY (PERCENT)	RESPONDENTS ADJUSTED FREQUENCY (PERCENT)	TEST PERIOD POPULATION ABSOLUTE FREQUENCY	TEST PERIOD POPULATION RELATIVE FREQUENCY (PERCENT)	TEST PERIOD POPULATION ADJUSTED FREQUENCY (PERCENT)
ENERGY CONSUMPTION PER CUBIC FOOT (KWH/MONTH PER CUBIC FOOT)						
4.08	0	0.0	0.0	1	0.1	0.1
4.15	7	2.3	2.4	13	1.8	1.9
5.30	10	3.3	3.5	18	2.5	2.6
5.40	1	0.3	0.4	3	0.4	0.4
6.14	1	0.3	0.4	1	0.1	0.1
6.79	1	0.3	0.4	4	0.6	0.6
7.25	25	8.3	8.7	62	8.6	9.0
7.82	0	0.0	0.0	9	1.2	1.3
8.10	2	0.7	0.7	3	0.4	0.4
8.47	36	11.9	12.6	36	11.9	5.2
8.94	14	4.6	4.9	36	5.0	5.2
9.13	69	22.8	24.1	159	22.1	23.1
9.67	14	4.6	4.9	50	6.9	7.3
9.74	4	1.3	1.4	11	1.5	1.6
9.80	34	11.2	11.9	62	8.6	9.0
10.15	11	3.6	3.8	29	4.0	4.2
10.20	0	0.0	0.0	11	1.5	1.6
10.33	1	0.3	0.4	9	1.2	1.3
10.77	13	4.3	4.5	34	4.7	4.9
11.06	43	14.2	15.0	86	11.9	12.5
No data	17	5.6	MISSING	33	4.6	MISSING
Total	303	100.0	100.0	720	100.0	100.0
	MEAN: 9.101			MEAN: 9.118		

TABLE 4.2

COMPARISON OF RESPONDENT REFRIGERATOR BUYERS WITH THE GENERAL POPULATION OF CANADA AND WESTERN CANADA ON DEMOGRAPHIC CHARACTERISTICS (Marital Status, Age, Labour Force Activity, Family Income, Level of Schooling)

CHARACTERISTIC	RESPONDENTS #	RESPONDENTS %	CANADA #	CANADA %	WESTERN CANADA #	WESTERN CANADA %
MARITAL STATUS:*						
Married	251	83.7	10,593,155	46.1	2,900,465	46.4
Separated or divorced	8	2.7	683,285	3.0	214,825	3.5
Widowed	21	7.0	1,043,560	4.5	287,690	4.6
Single	9	3.0	10,672,600	46.4	2,844,495	45.5
Common law	11	3.7	-	-	-	-
No data	3	-	-	-	-	-
Total	303	100.0	22,992,600	100.0	6,247,475	100.0
AGE:*						
Under 25 yrs.	14	4.7	10,375,235	45.1	2,822,655	45.2
25-34 yrs.	62	20.7	3,620,550	15.8	955,550	15.3
35-44 yrs.	63	21.1	2,547,010	11.3	681,320	10.9
45-54 yrs.	63	21.1	2,473,025	10.8	654,835	10.5
over 55 yrs.	97	32.4	3,926,780	17.1	1,132,565	18.1
No data	4	-	-	-	-	-
Total	303	100.0	22,992,600	100.0	6,246,925	100.0

*Source: Statistics Canada (1976 Census)

TABLE 4.2 cont'd

CHARACTERISTIC	RESPONDENTS #	RESPONDENTS %	CANADA #	CANADA %	WESTERN CANADA #	WESTERN CANADA %
LABOUR FORCE ACTIVITY:* (includes spouses of respondents)						
			(000's)		(000's)	
Total employed	388	70.8	9,812	55.9	2,804	58.4
Full time	311	56.8	8,520	48.6	2,395	50.0
Part time	77	14.0	1,292	7.3	408	8.4
Total unemployed	160	29.2	977	5.6	215	4.5
Not in labour force			6,758	38.5	1,781	37.1
Total	548	100.0	17,547	100.0	4,800	100.0
Participation rate		70.8%		61.5%		62.9%
Unemployment rate		-		9.1%		7.1%

* Source: Statistics Canada (1976 Census)

TABLE 4.2 cont'd

CHARACTERISTIC	RESPONDENTS #	RESPONDENTS %	CANADA #	CANADA %	WESTERN CANADA #	WESTERN CANADA %
LEVEL OF SCHOOLING:*						
None or some public school	16	5.4	856,060	5.6	187,970	4.5
Completed public school	28	9.5	3,520,595	22.9	778,695	18.6
Some secondary school	28	9.5	4,844,935	31.5	1,493,715	35.8
Completed secondary school	62	20.9	1,695,870	11.0	427,065	10.2
Some technical school	21	7.1	1,151,210	7.5	347,520	8.3
Technical school graduate	28	9.5	1,577,180	10.2	474,325	11.4
Some university	33	11.1	674,825	4.4	198,380	4.7
University graduate	42	14.2	826,215	5.4	205,865	4.9
Post-Graduate	38	12.8	255,105	1.7	64,155	1.5
No data	7	-	-	-	-	-
Total	303	100.0	15,400,995	100.0	4,177,690	100.0

*Source: Statistics Canada (1976 Census)

TABLE 4.2 cont'd

CHARACTERISTIC	RESPONDENTS #	RESPONDENTS %	CANADA %	WESTERN CANADA %
FAMILY INCOME GROUP:*				
Under $10,000	28	10.0	31.3	30.2
11,000	20	6.6	10.0	9.0
12,000			($11-15,000)	($11-15,000)
15,000	14	4.6	17.0	16.7
17,500	26	8.6	($15-17,500)	($15-17,500)
20,000	27	8.9	31.8	33.0
25,000	55	18.2	($17,500-25,000)	($17,500-25,000)
30,000	33	10.9		
35,000	26	8.6	9.8	10.9
Over $35,000	53	17.5	($30,000 and over)	($30,000 and over)
Total	282	100.0	100.0	100.0
Average income	$22,625		$14,833	$15,278
Median income	$23,364		$13,516	$13,859

*Source: Canada Year Book 1976-77